Figure 1

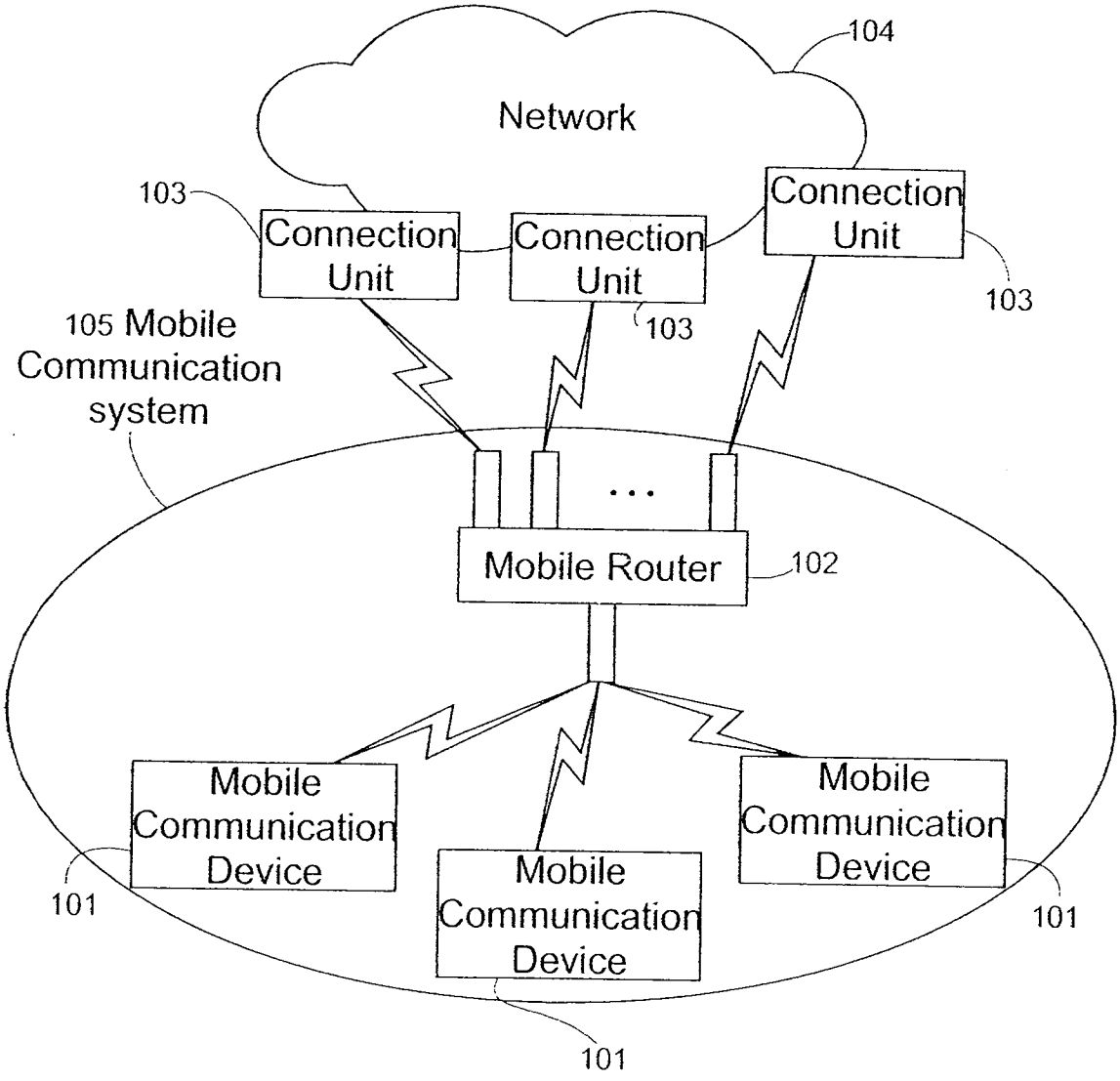
104
Network
103
Connection Unit
Connection Unit
Connection Unit
103
103
105 Mobile Communication system
...
Mobile Router
102
Mobile Communication Device
Mobile Communication Device
Mobile Communication Device
101
101
101

Figure 2

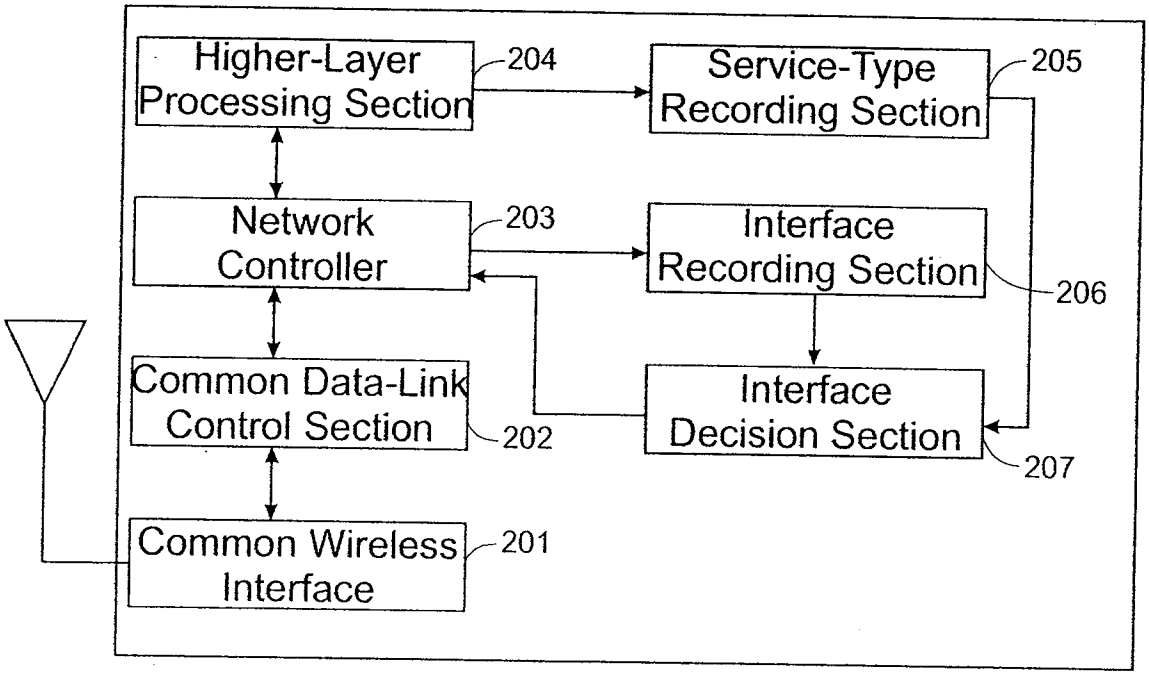

Figure 3

301 FLAG	302 SERVICE	303 SPEED	304 VOICE	305 MOVING IMAGE	306 AREA	307 PRIVACY	308 PRICE
VALID	VOICE COMMUN--ICATION	B	AA	B	AA	AA	A
VALID	INTERNET	AA	B	B	A	B	AA
VALID	MOVING -IMAGE COMMUN--ICATION	AA	B	AA	A	AA	A

Figure 4

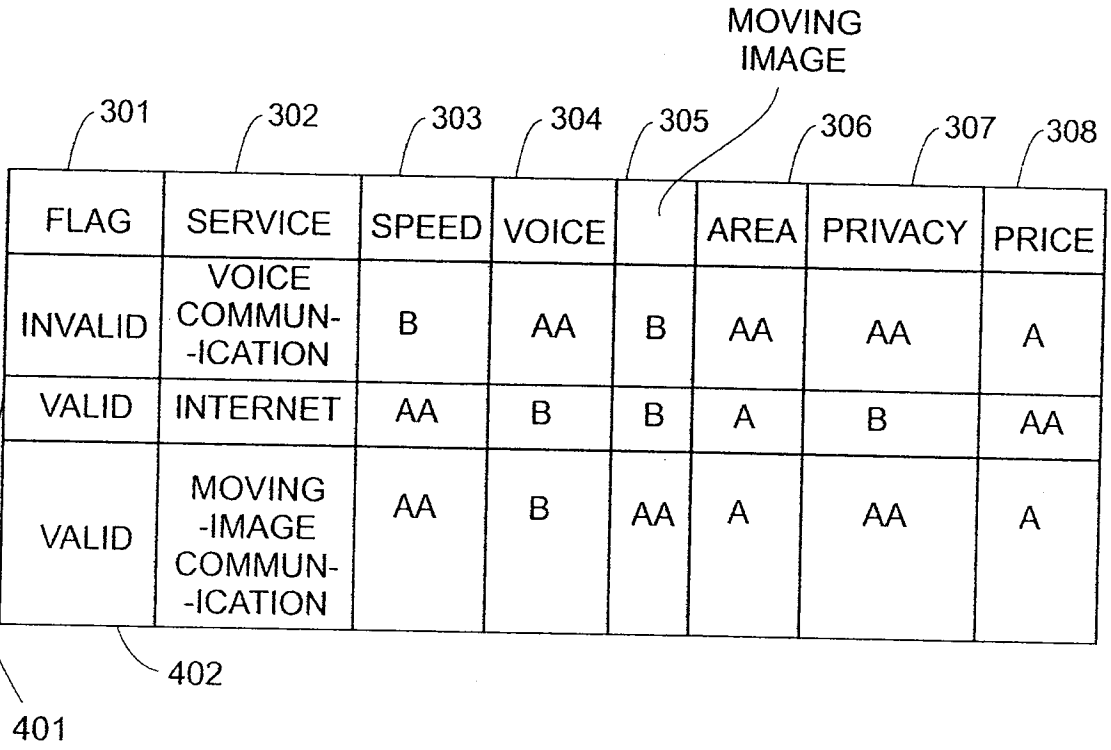

Figure 5

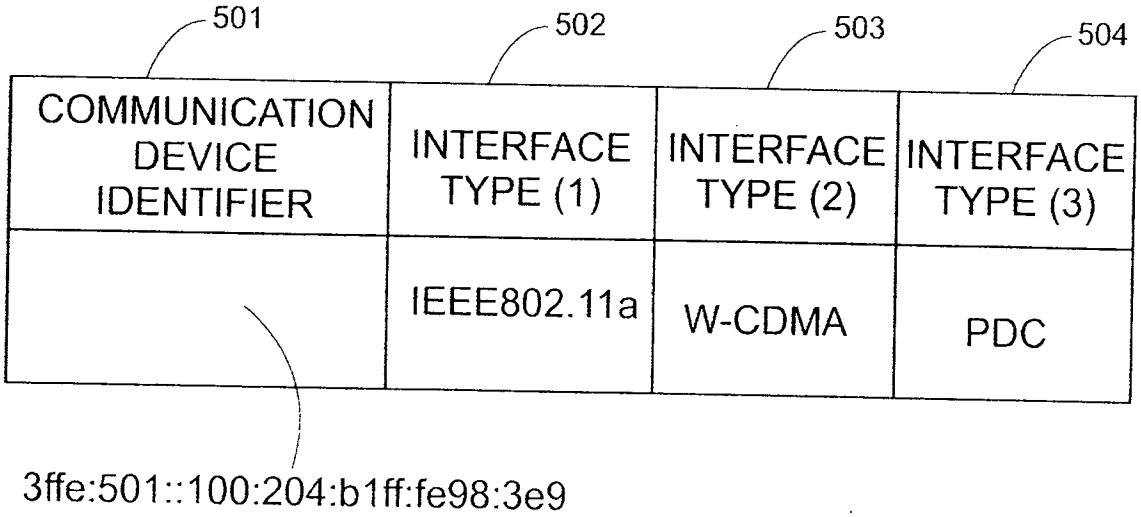

Figure 6

601 TYPE	602 SPEED	603 VOICE	604 MOVING IMAGE	605 AREA	606 PRIVACY	607 PRICE
CDMA2000	2	5	3	3	5	2
W-CDMA	3	5	4	2	5	1
IEEE802.11a	5	3	2	2	3	5
IEEE802.11b	4	1	1	2	3	5
IEEE802.11e	5	4	5	1	3	5
PHS	2	5	2	3	5	3
PDC	1	5	1	5	5	3

Figure 7

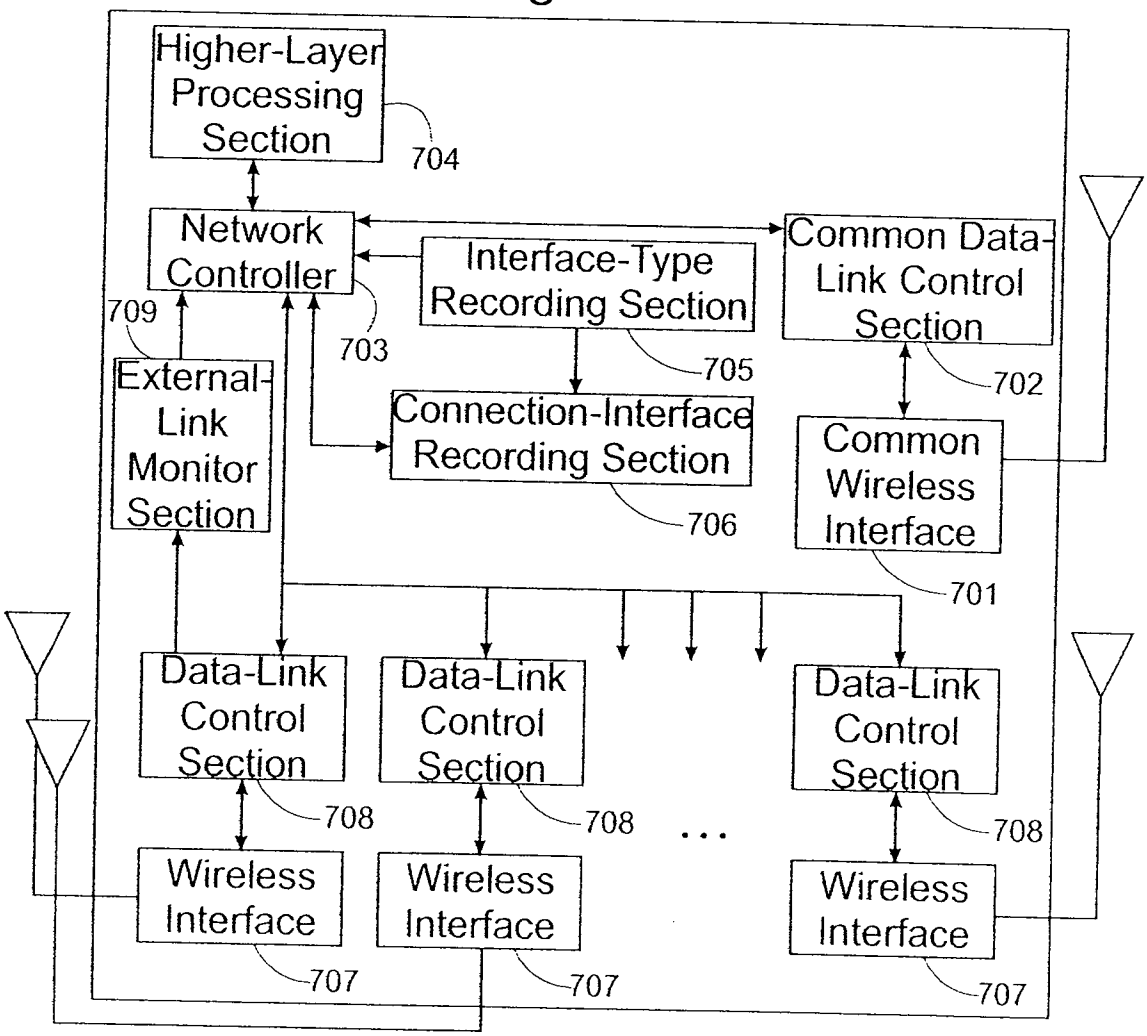

Figure 8

801 INTERFACE POSSESSED	802 INTERFACE ID	803 LINK STATUS
IEEE802.11a	3ffe:501:27:2210:33b7:25ff:fe44:3e77	Connected
W-CDMA	3ffe:501:27:22:ddb5:acff:fe25:3382	Connected
PDC	3ffe:501:27:dbe1:290:31ff:fe88:6621	Connected

Figure 9

901 MOBILE COMMUNICATION DEVICE IDENTIFIER	902 INTERFACE TYPE
3ffe:501::100:3226:bdff:fe20:667d	W-CDMA

Figure 10

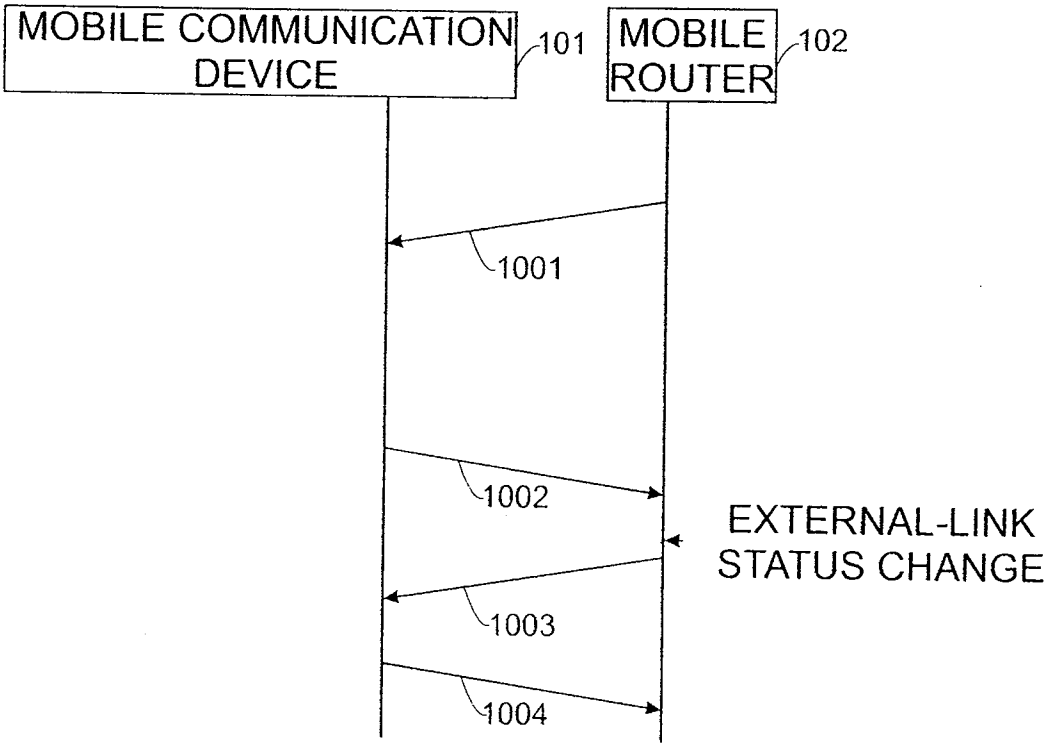

Figure 11

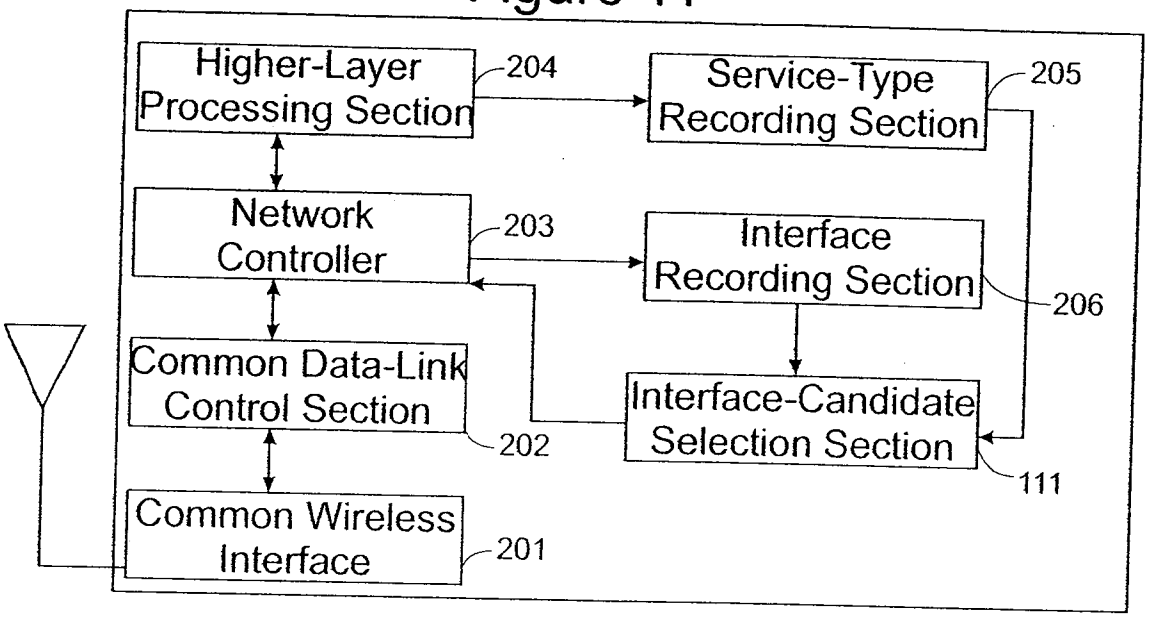

Figure 12

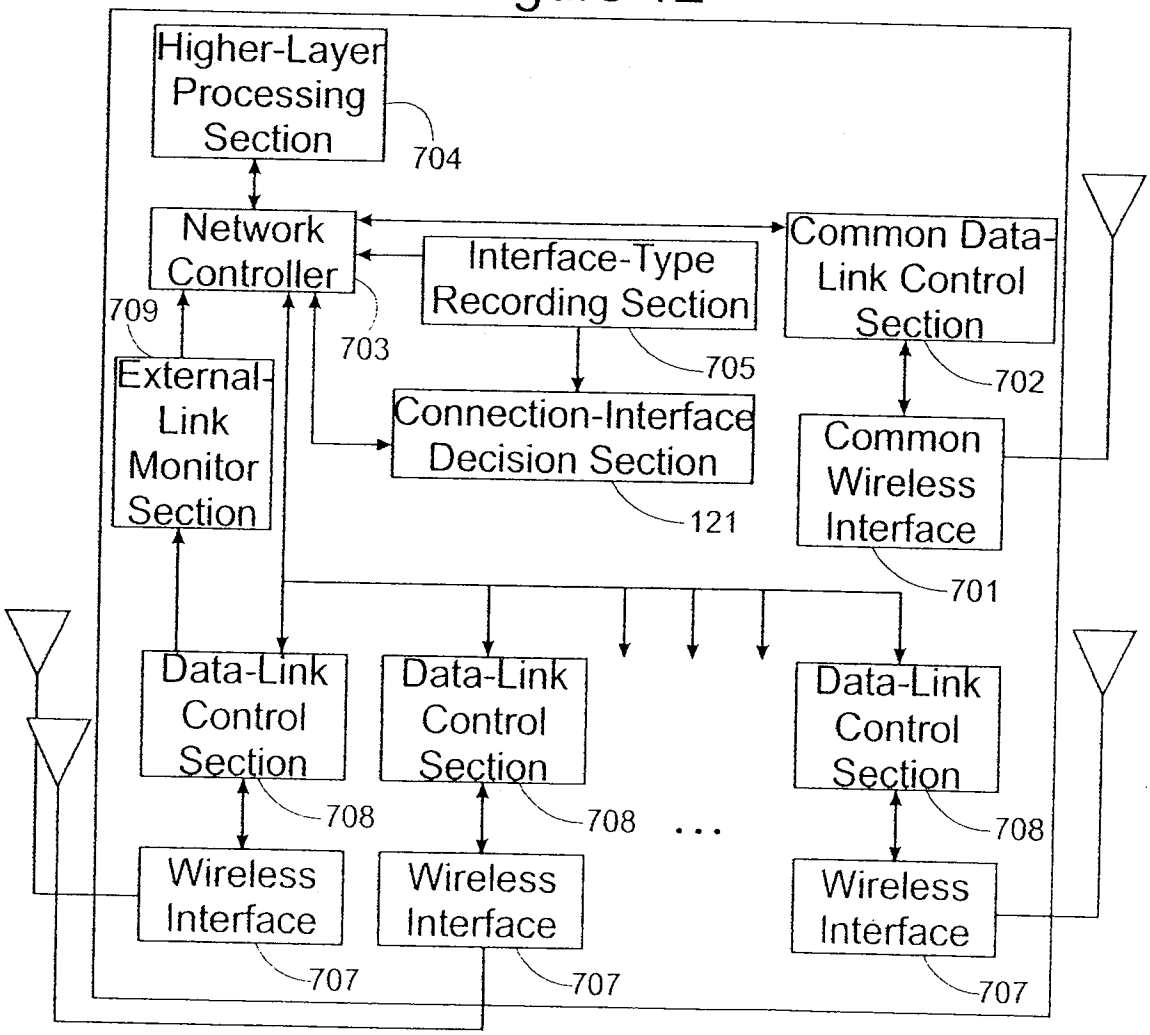

Figure 13

1301 MOBILE COMMUNICATION DEVICE	1302 INTERFACE TYPE
3ffe:501::100:3226:bdff:fe20:667d	W-CDMA
	IEEE802.11a

Figure 14

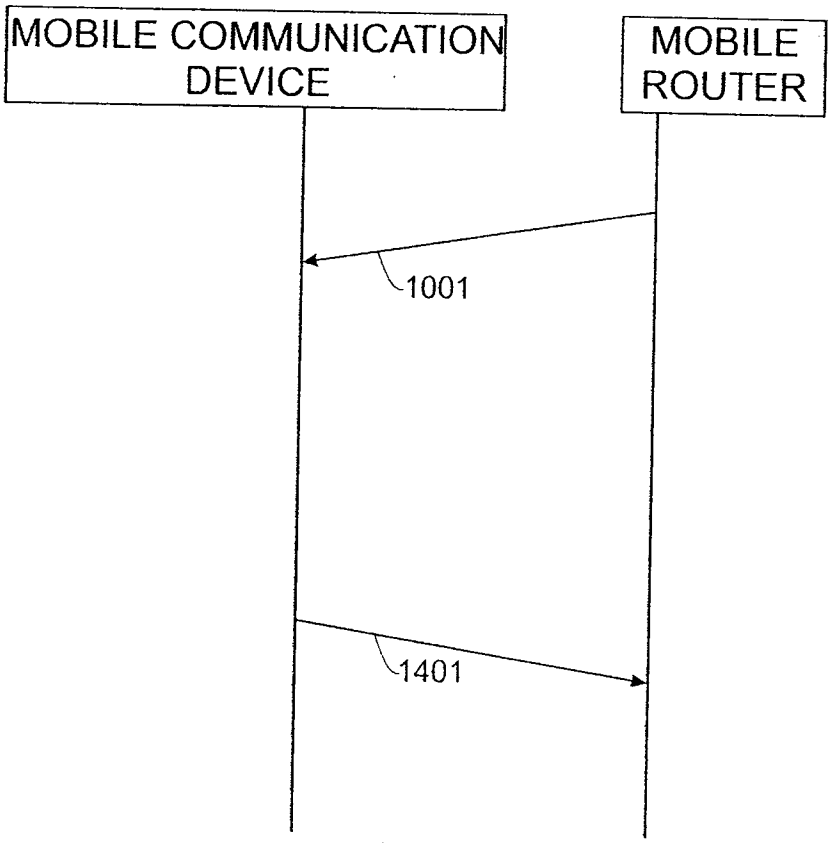

Figure 15

MOBILE COMMUNICATION DEVICE IDENTIFIER (1501)	INTERFACE TYPE (1502)	PRIORITY (1503)
3ffe:501::100:3226:bdff:fe20:667d	W-CDMA	1
	IEEE802.11a	2

Figure 16

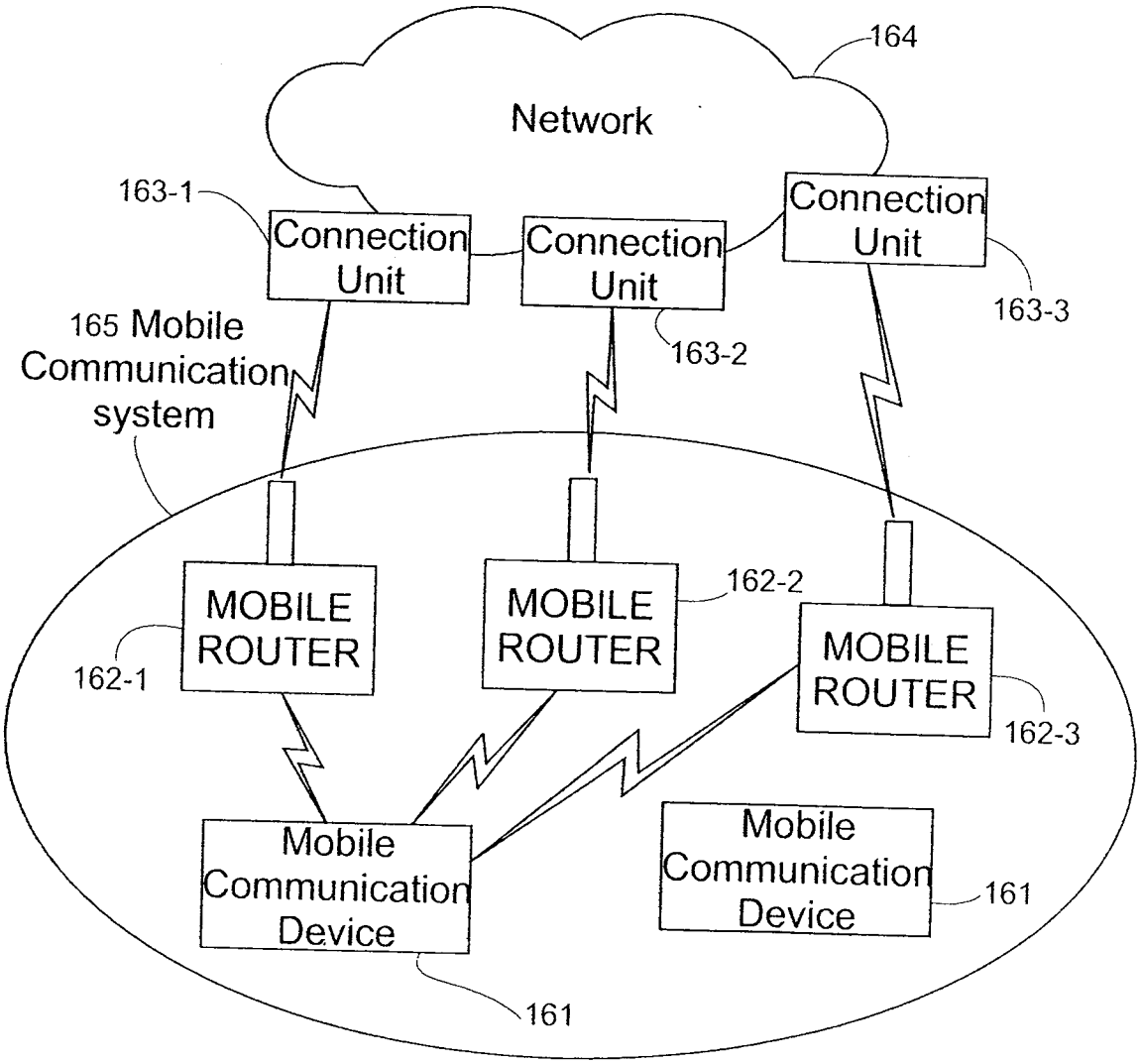

Figure 17

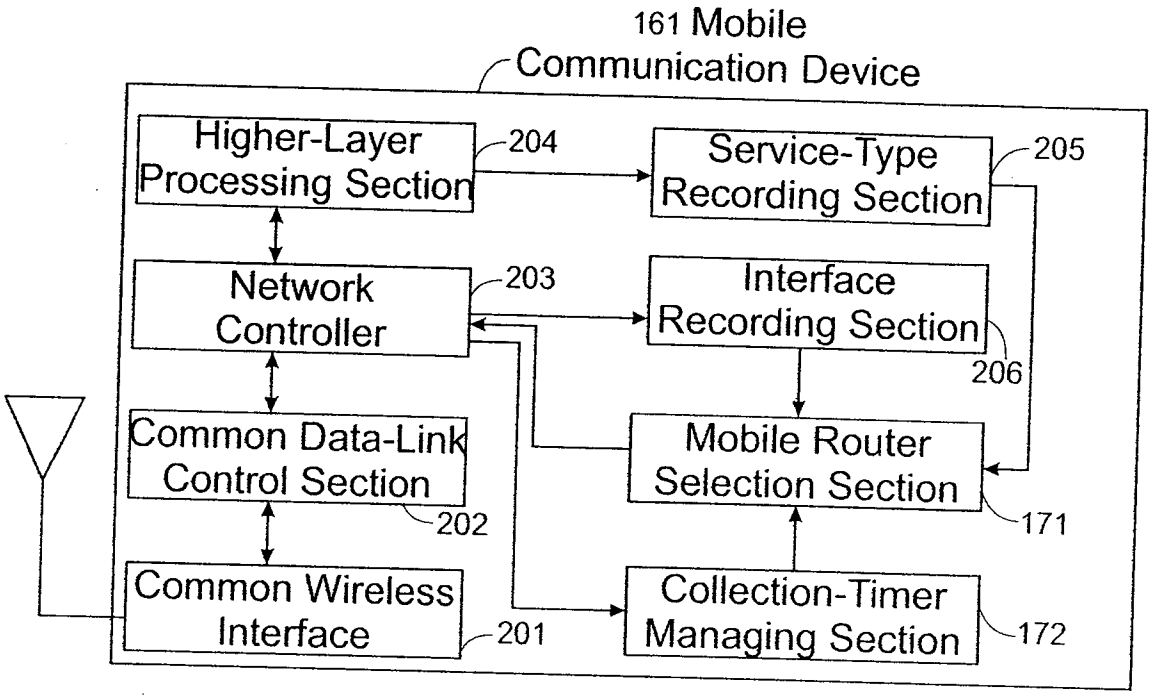

Figure 18

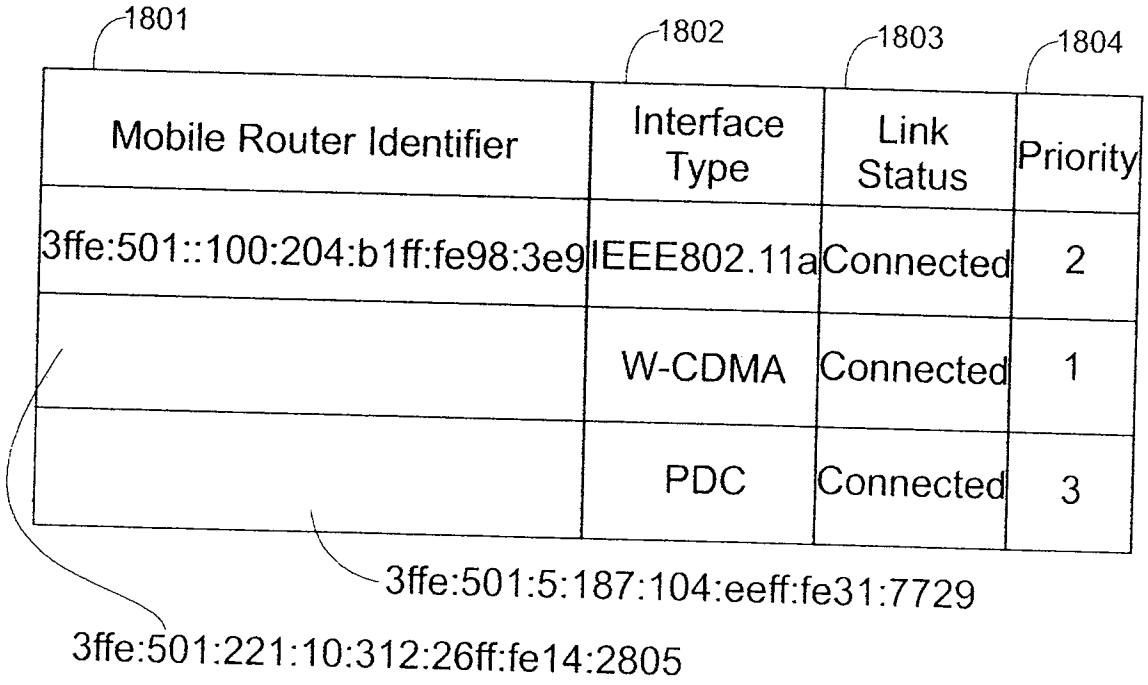

Figure 19

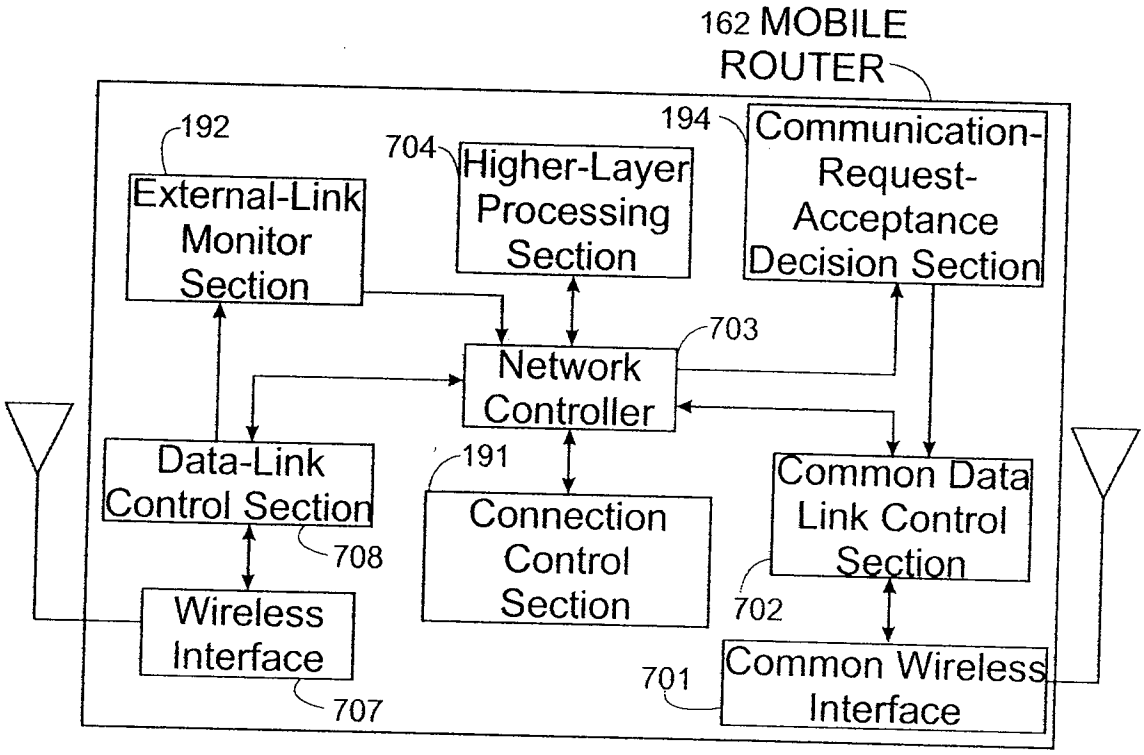

Figure 20

2001 MOBILE COMMUNICATION DEVICE IDENTIFIER	2002 MOBILE ROUTER IDENTIFIER	2003 INTERFACE TYPE	2004 LINK STATUS	2005 PRIORITY
3ffe:501::100:3226:bdff:fe20:667d	3ffe:501::100:204:b1ff:fe98:3e9	W-CDMA	CONN-ECTED	1
	3ffe:501:221:10:312:26ff:fe14:2805	IEEE802.11a	CONN-ECTED	2

Figure 21

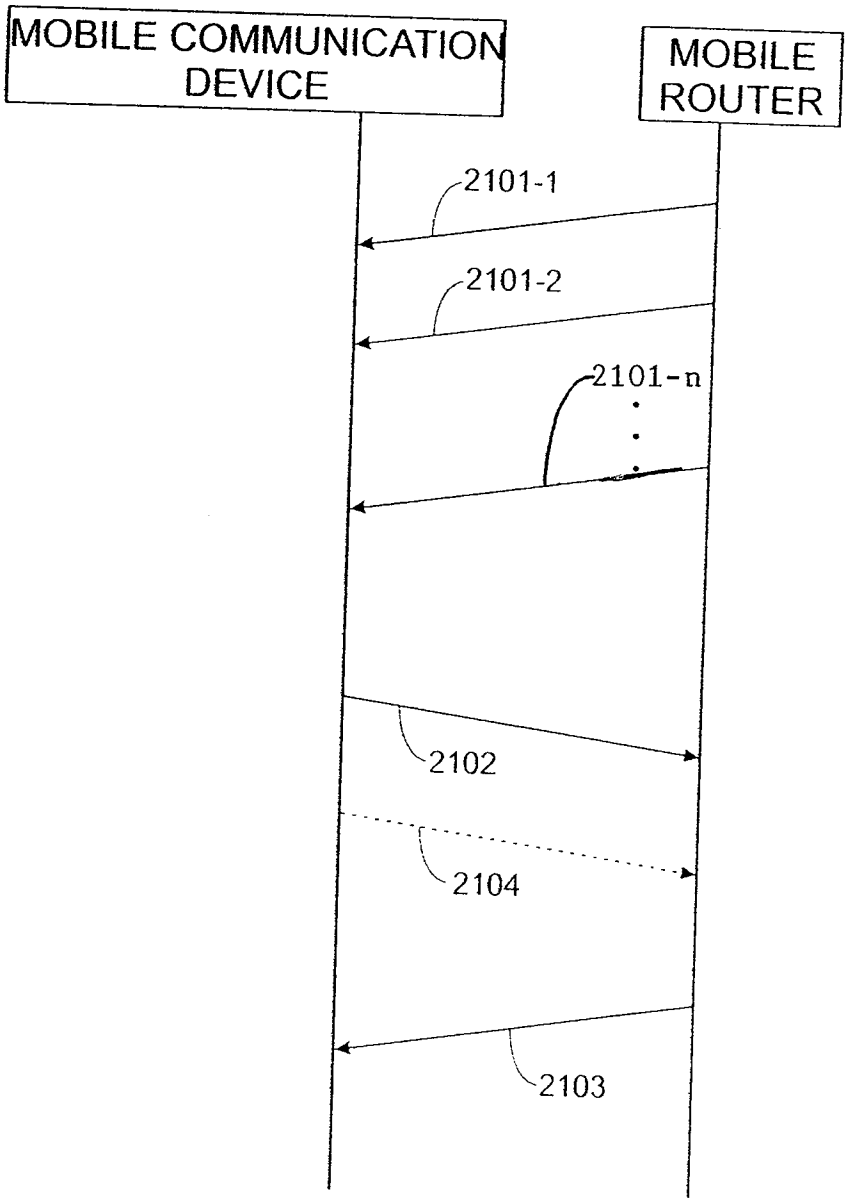
MOBILE COMMUNICATION DEVICE
MOBILE ROUTER
2101-1
2101-2
2101-n
2102
2104
2103

Figure 22A

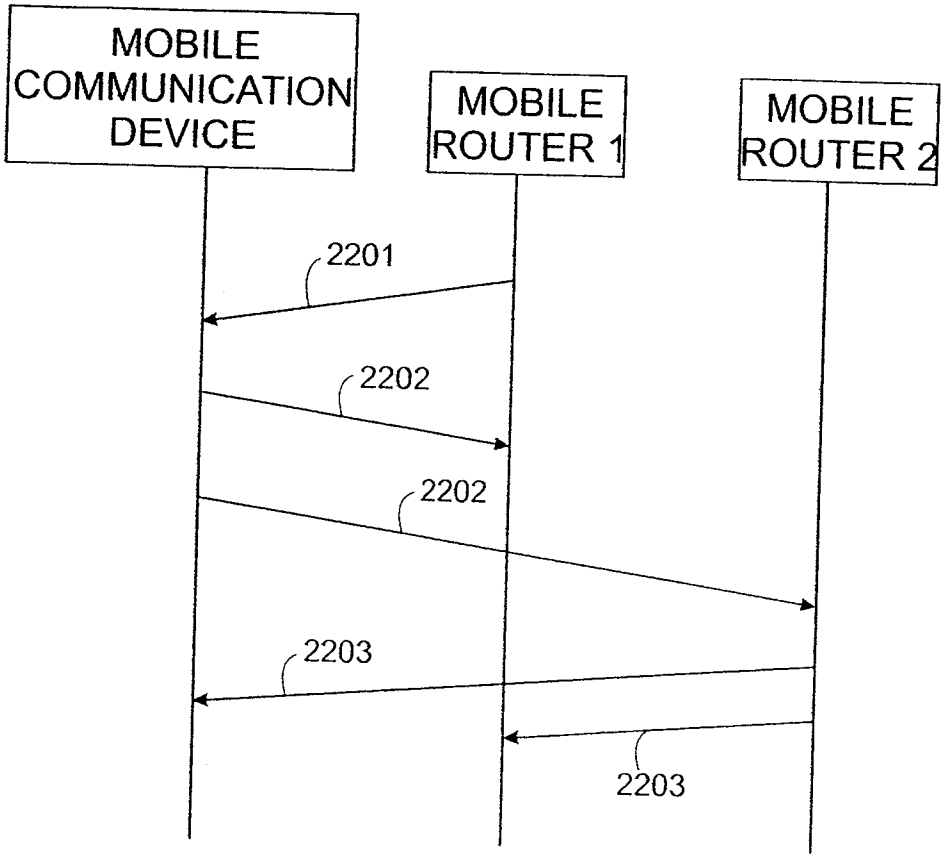

Figure 22B

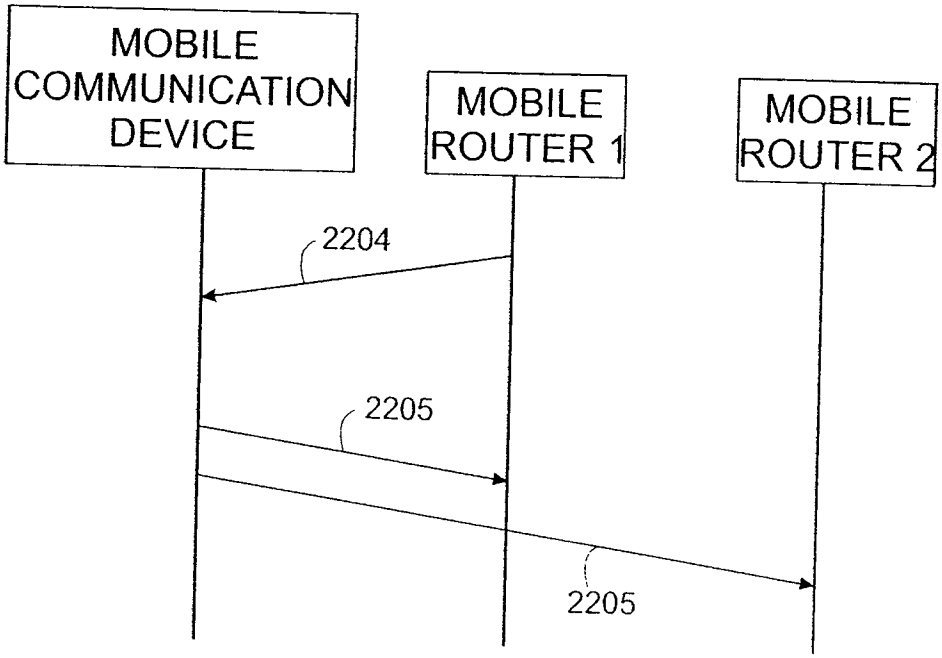

Figure 23

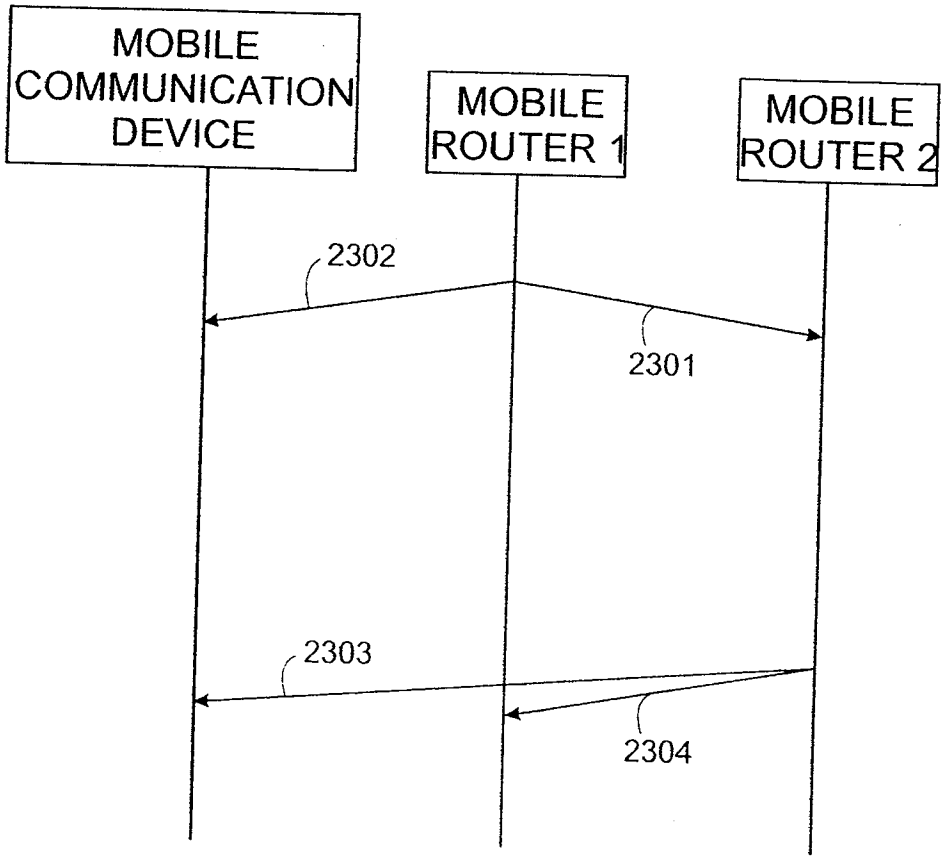

Figure 24

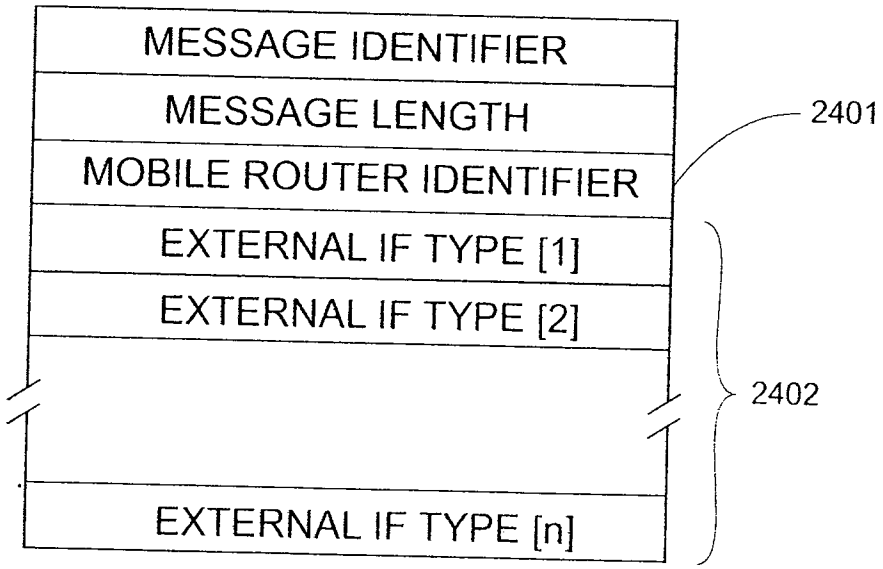

Figure 25a

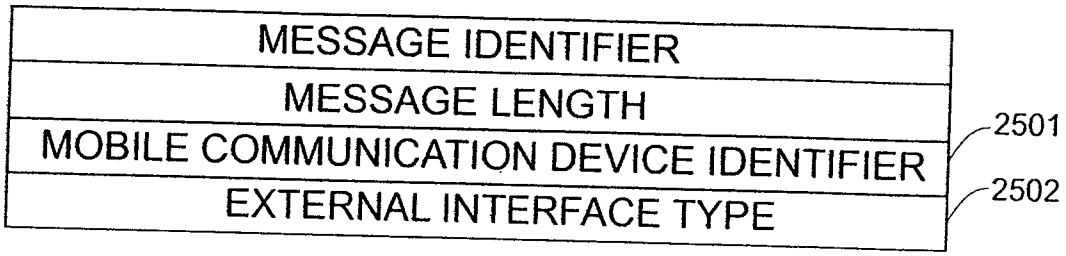

Figure 25b

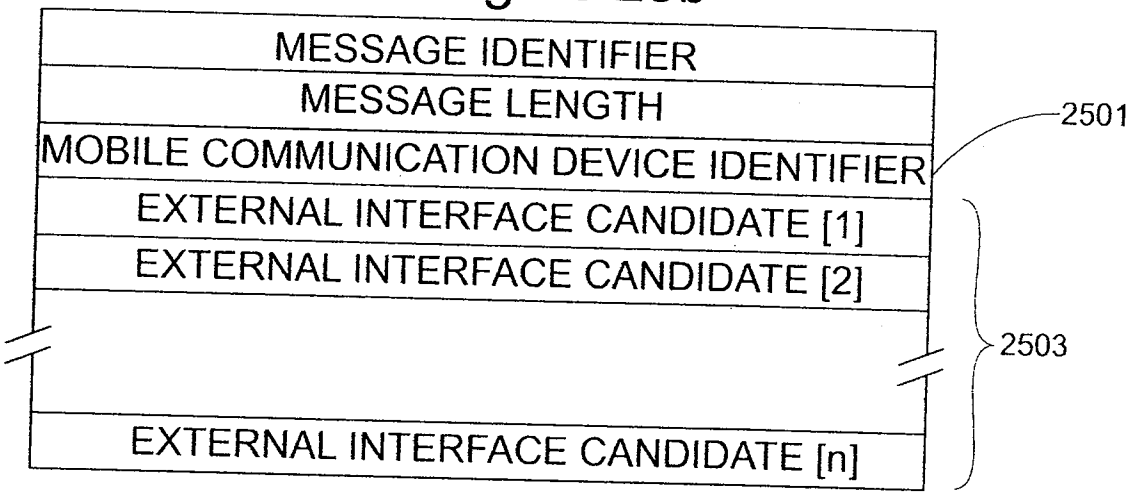

Figure 25c

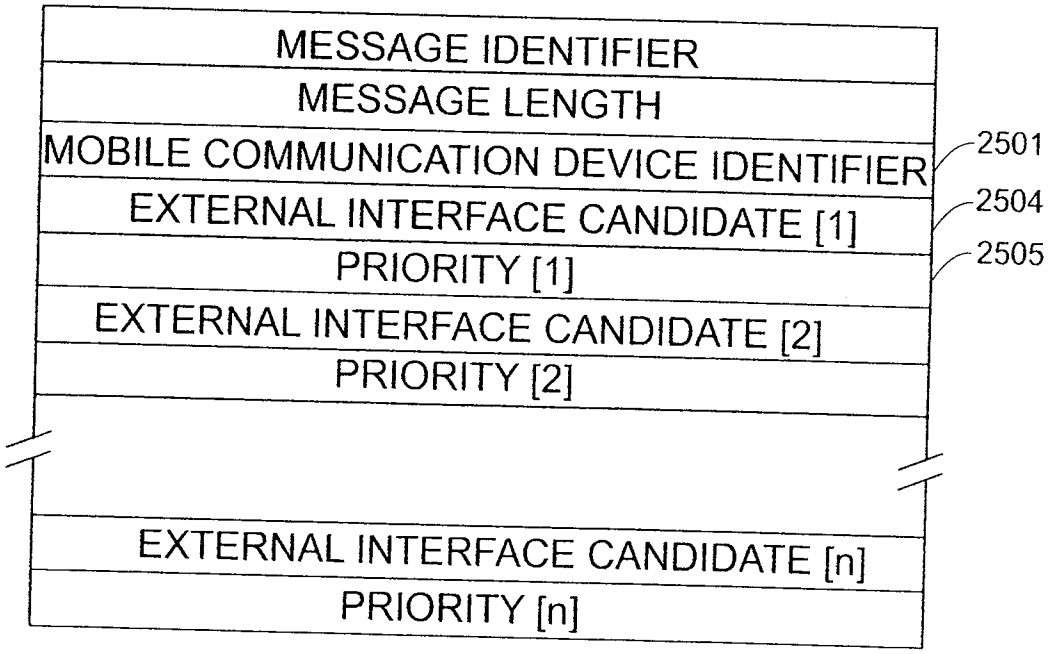

Figure 26a

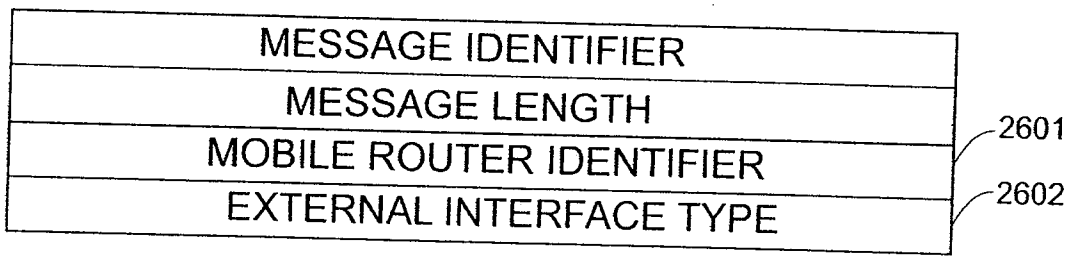

Figure 26b

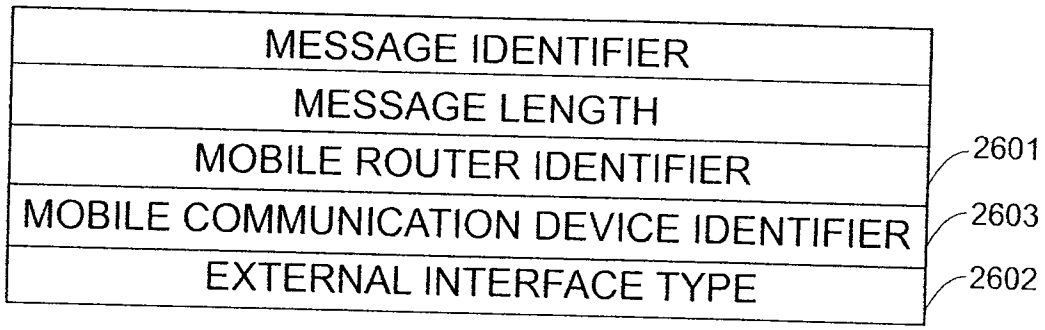

Figure 27

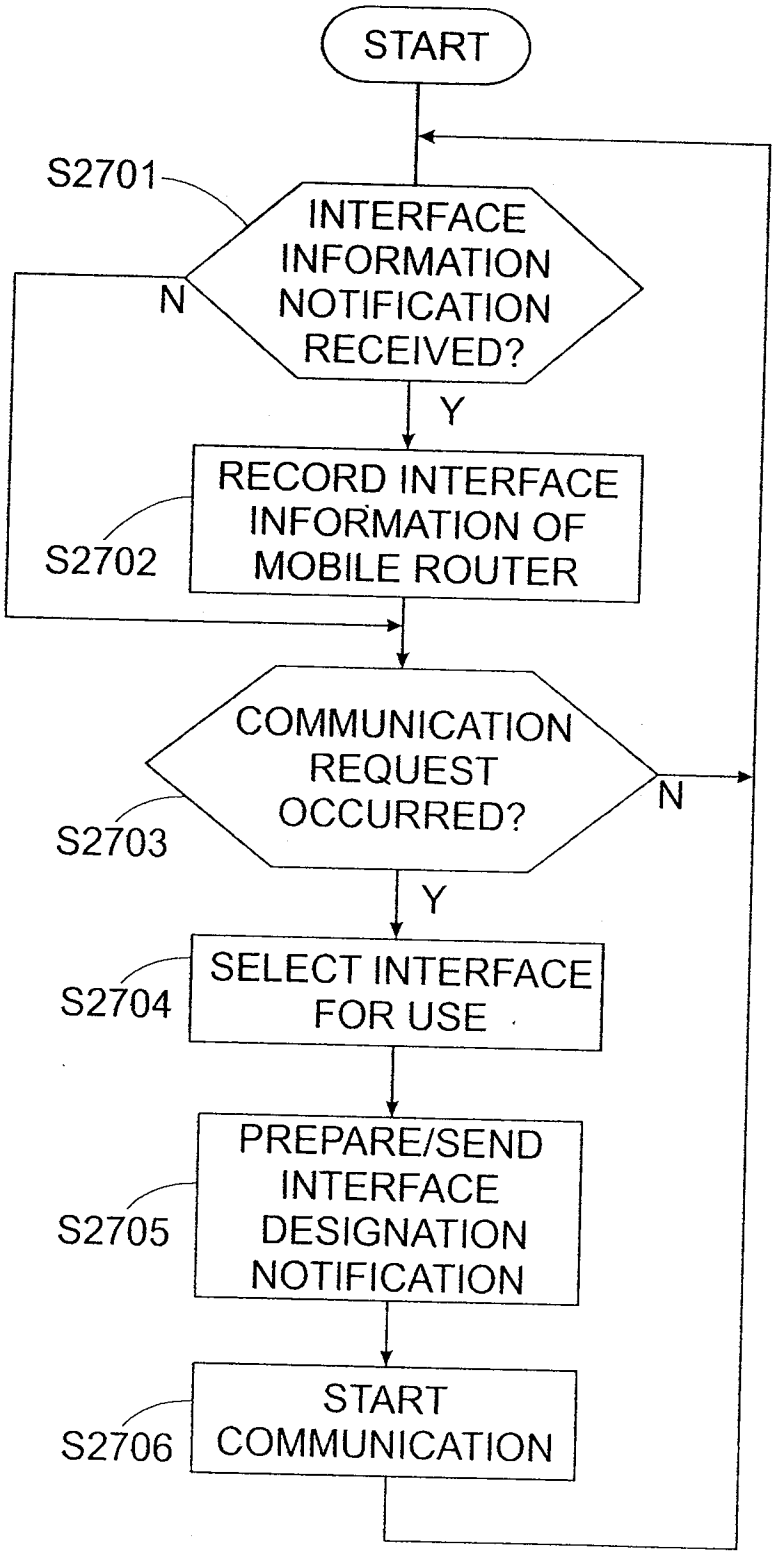
START
S2701
INTERFACE INFORMATION NOTIFICATION RECEIVED?
N
Y
RECORD INTERFACE INFORMATION OF MOBILE ROUTER
S2702
COMMUNICATION REQUEST OCCURRED?
S2703
N
Y
SELECT INTERFACE FOR USE
S2704
PREPARE/SEND INTERFACE DESIGNATION NOTIFICATION
S2705
START COMMUNICATION
S2706

Figure 28

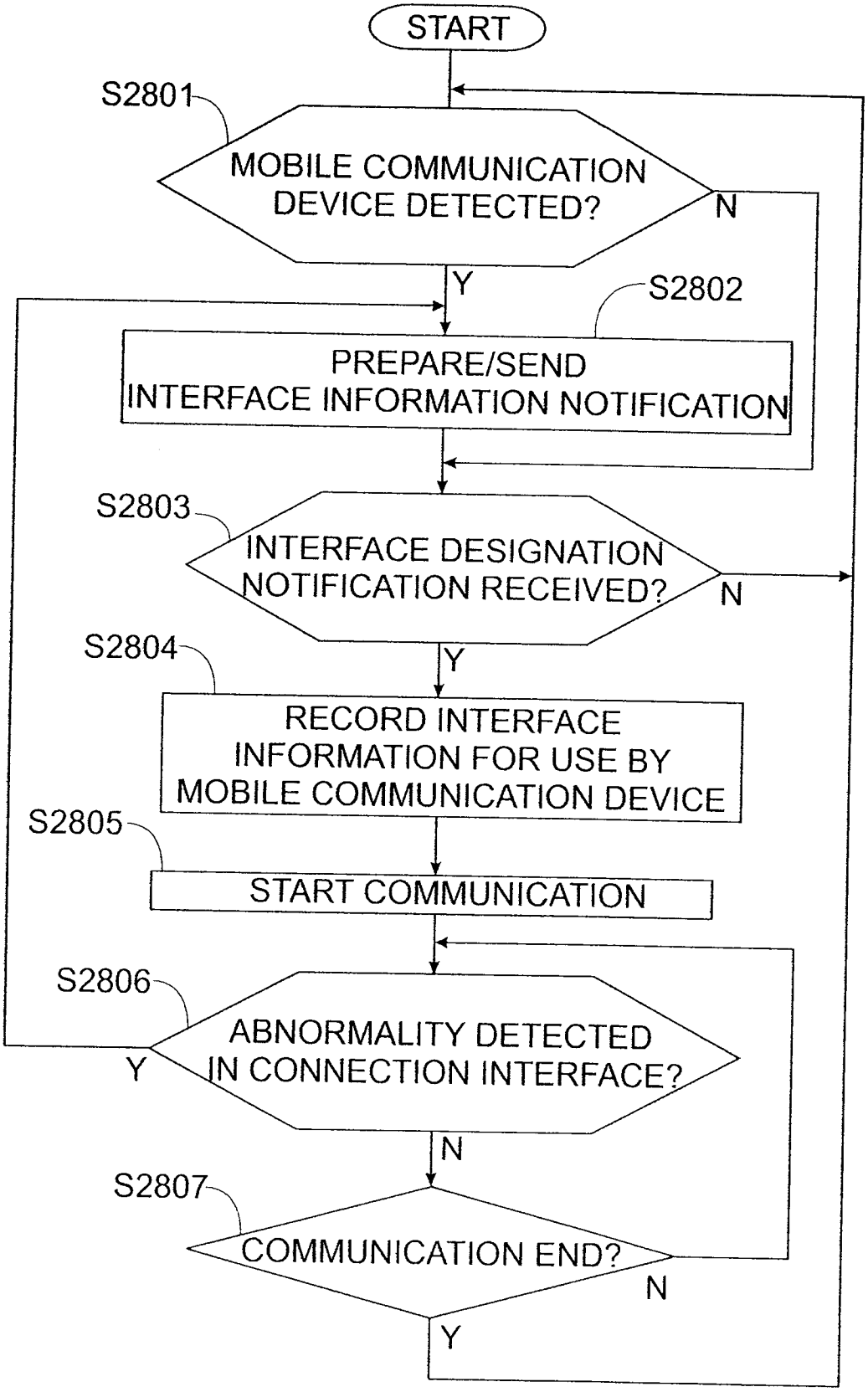
START
S2801
MOBILE COMMUNICATION DEVICE DETECTED?
N
Y
S2802
PREPARE/SEND INTERFACE INFORMATION NOTIFICATION
S2803
INTERFACE DESIGNATION NOTIFICATION RECEIVED?
N
Y
S2804
RECORD INTERFACE INFORMATION FOR USE BY MOBILE COMMUNICATION DEVICE
S2805
START COMMUNICATION
S2806
ABNORMALITY DETECTED IN CONNECTION INTERFACE?
Y
N
S2807
COMMUNICATION END?
N
Y

Figure 29

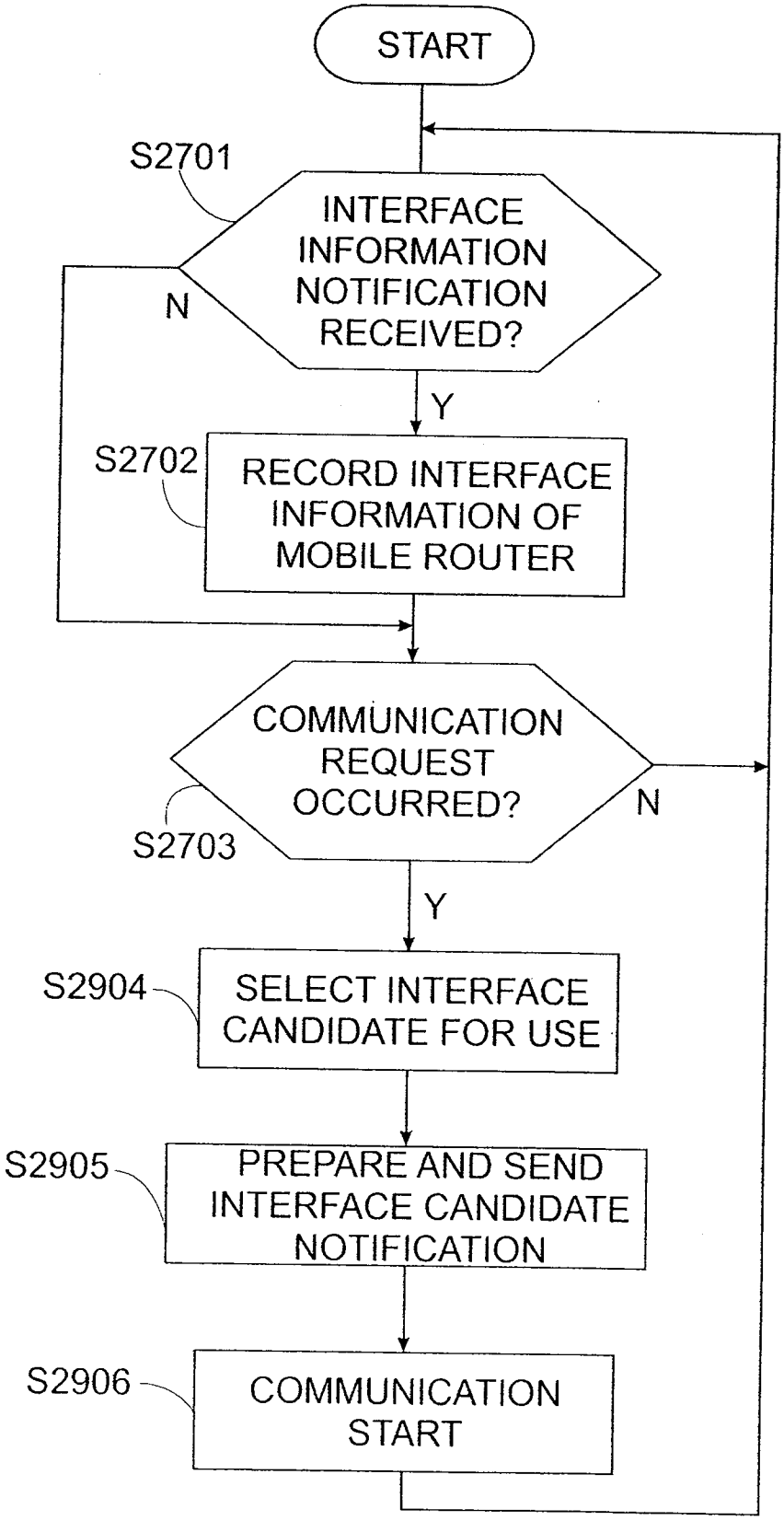
START
S2701
INTERFACE INFORMATION NOTIFICATION RECEIVED?
N
Y
S2702
RECORD INTERFACE INFORMATION OF MOBILE ROUTER
COMMUNICATION REQUEST OCCURRED?
S2703
N
Y
S2904
SELECT INTERFACE CANDIDATE FOR USE
S2905
PREPARE AND SEND INTERFACE CANDIDATE NOTIFICATION
S2906
COMMUNICATION START

Figure 30

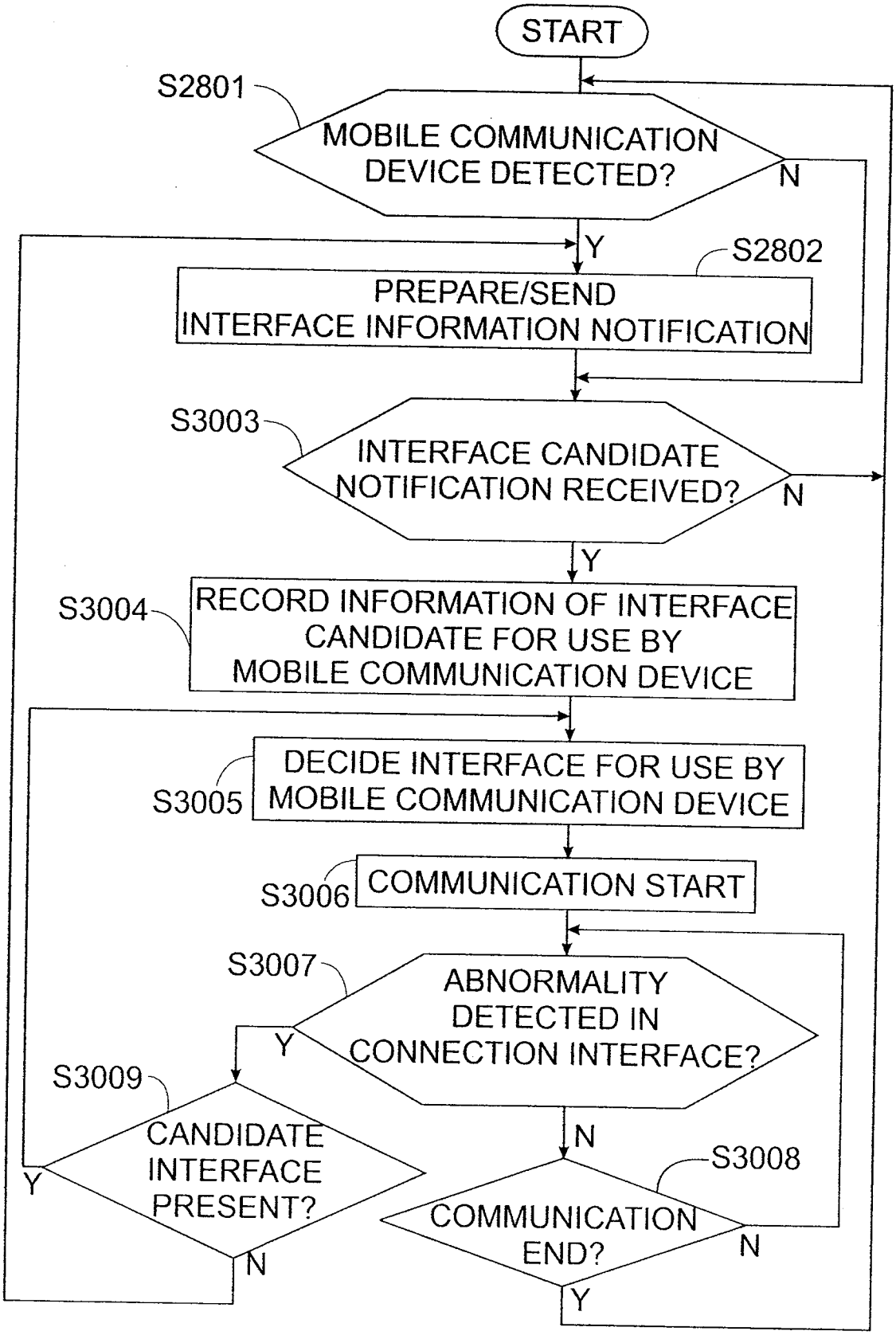
START
S2801
MOBILE COMMUNICATION DEVICE DETECTED?
N
Y
S2802
PREPARE/SEND INTERFACE INFORMATION NOTIFICATION
S3003
INTERFACE CANDIDATE NOTIFICATION RECEIVED?
N
Y
S3004
RECORD INFORMATION OF INTERFACE CANDIDATE FOR USE BY MOBILE COMMUNICATION DEVICE
S3005
DECIDE INTERFACE FOR USE BY MOBILE COMMUNICATION DEVICE
S3006
COMMUNICATION START
S3007
ABNORMALITY DETECTED IN CONNECTION INTERFACE?
Y
N
S3009
CANDIDATE INTERFACE PRESENT?
Y
N
S3008
COMMUNICATION END?
N
Y

Figure 31

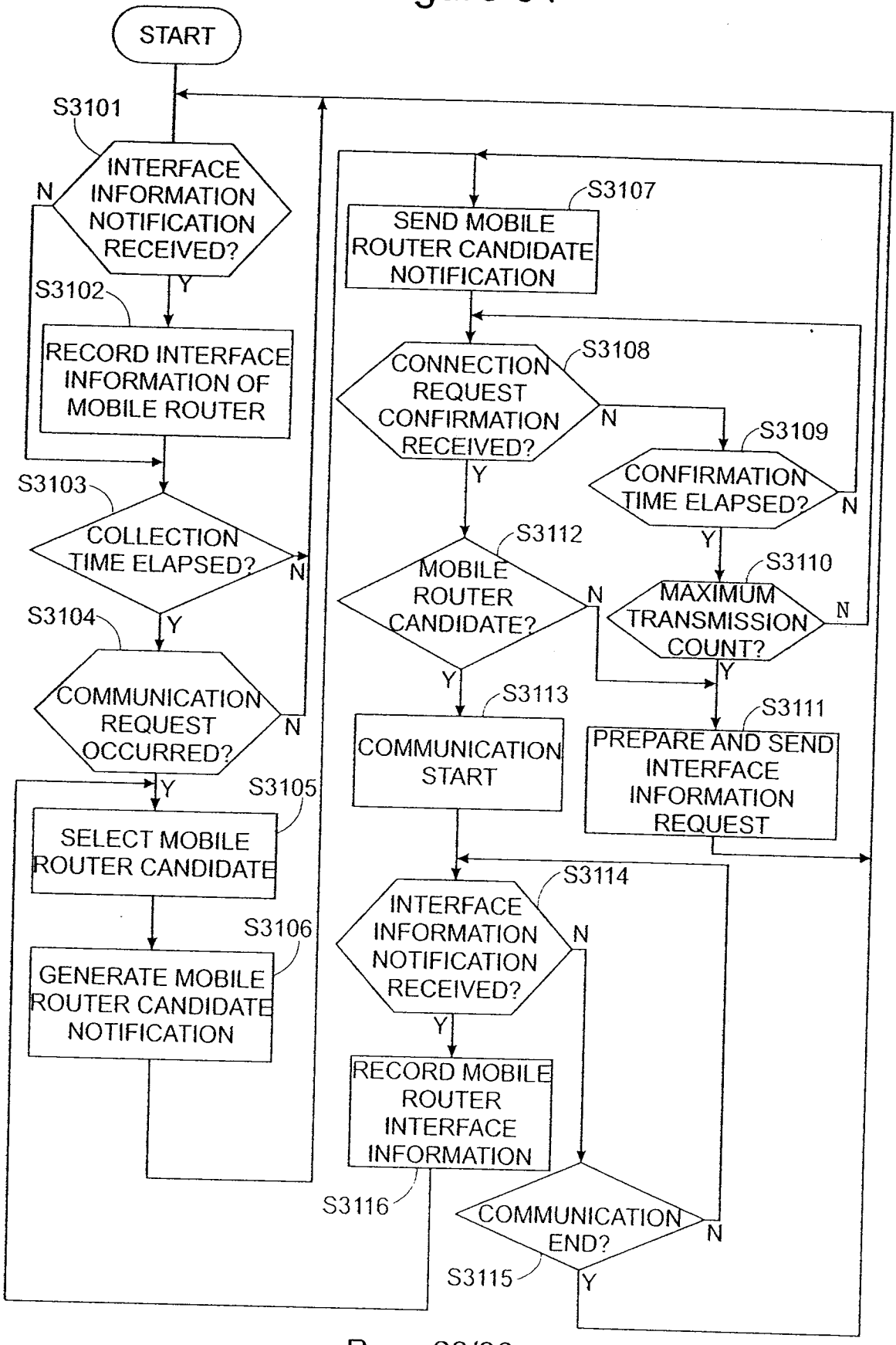
START
S3101
INTERFACE INFORMATION NOTIFICATION RECEIVED?
N
Y
S3102
RECORD INTERFACE INFORMATION OF MOBILE ROUTER
S3103
COLLECTION TIME ELAPSED?
N
Y
S3104
COMMUNICATION REQUEST OCCURRED?
N
Y
S3105
SELECT MOBILE ROUTER CANDIDATE
S3106
GENERATE MOBILE ROUTER CANDIDATE NOTIFICATION
S3107
SEND MOBILE ROUTER CANDIDATE NOTIFICATION
S3108
CONNECTION REQUEST CONFIRMATION RECEIVED?
N
Y
S3109
CONFIRMATION TIME ELAPSED?
N
Y
S3110
MAXIMUM TRANSMISSION COUNT?
N
Y
S3111
PREPARE AND SEND INTERFACE INFORMATION REQUEST
S3112
MOBILE ROUTER CANDIDATE?
N
Y
S3113
COMMUNICATION START
S3114
INTERFACE INFORMATION NOTIFICATION RECEIVED?
N
Y
RECORD MOBILE ROUTER INTERFACE INFORMATION
S3116
COMMUNICATION END?
N
S3115
Y

Figure 32

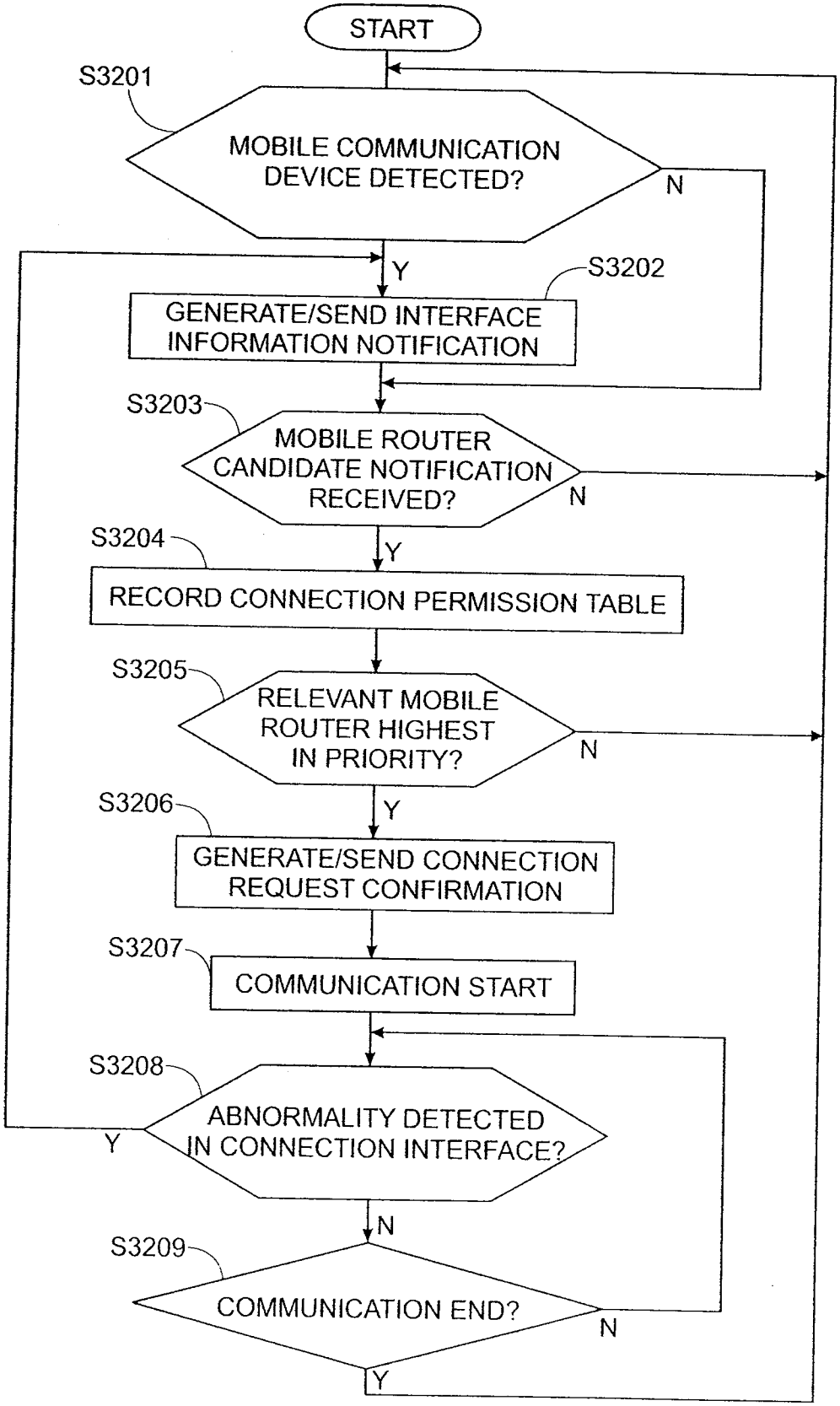
START
S3201
MOBILE COMMUNICATION DEVICE DETECTED?
N
Y
S3202
GENERATE/SEND INTERFACE INFORMATION NOTIFICATION
S3203
MOBILE ROUTER CANDIDATE NOTIFICATION RECEIVED?
N
Y
S3204
RECORD CONNECTION PERMISSION TABLE
S3205
RELEVANT MOBILE ROUTER HIGHEST IN PRIORITY?
N
Y
S3206
GENERATE/SEND CONNECTION REQUEST CONFIRMATION
S3207
COMMUNICATION START
S3208
ABNORMALITY DETECTED IN CONNECTION INTERFACE?
Y
N
S3209
COMMUNICATION END?
N
Y

Figure 33

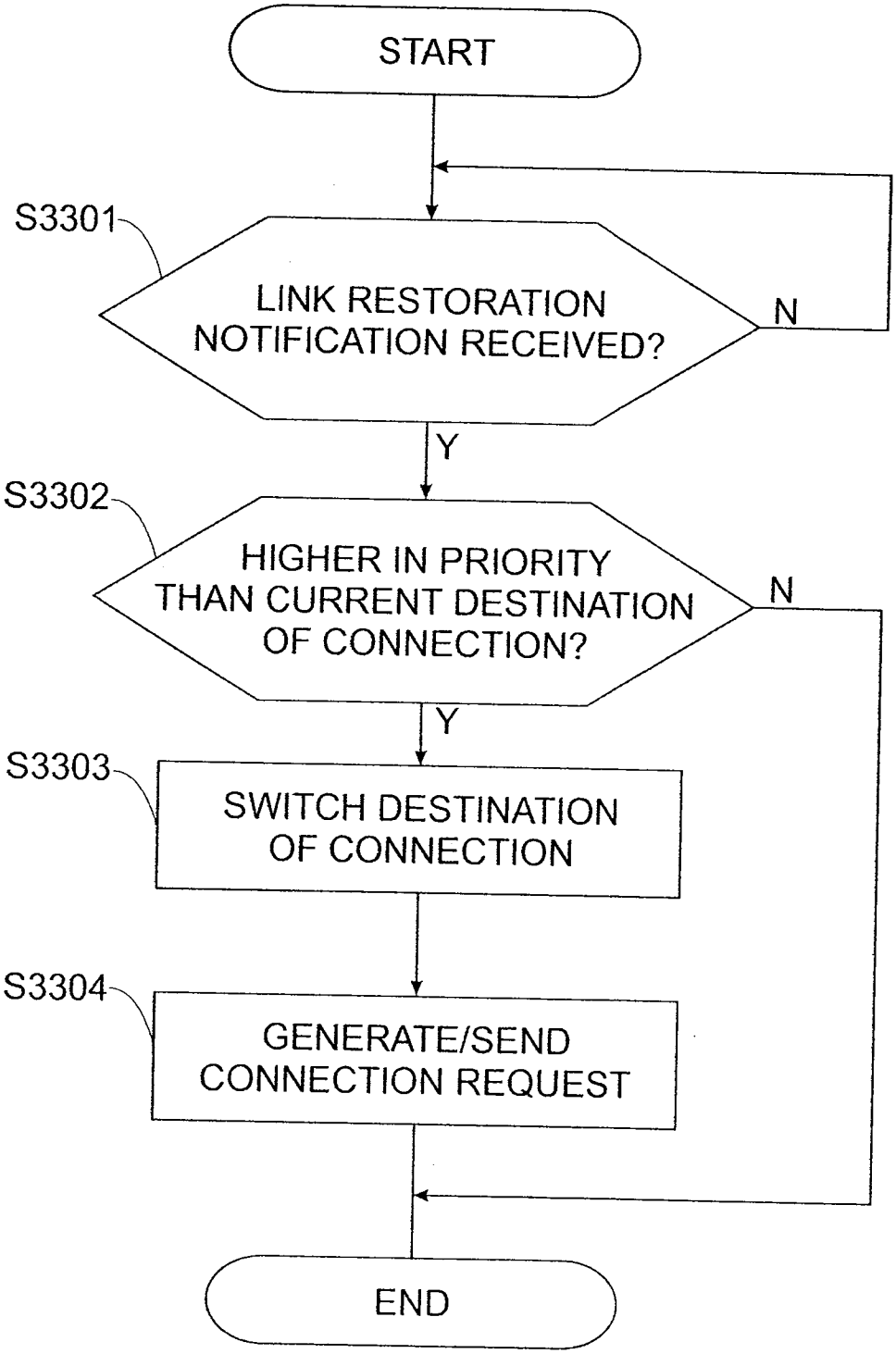
START
S3301
LINK RESTORATION NOTIFICATION RECEIVED?
N
Y
S3302
HIGHER IN PRIORITY THAN CURRENT DESTINATION OF CONNECTION?
N
Y
S3303
SWITCH DESTINATION OF CONNECTION
S3304
GENERATE/SEND CONNECTION REQUEST
END

Figure 34

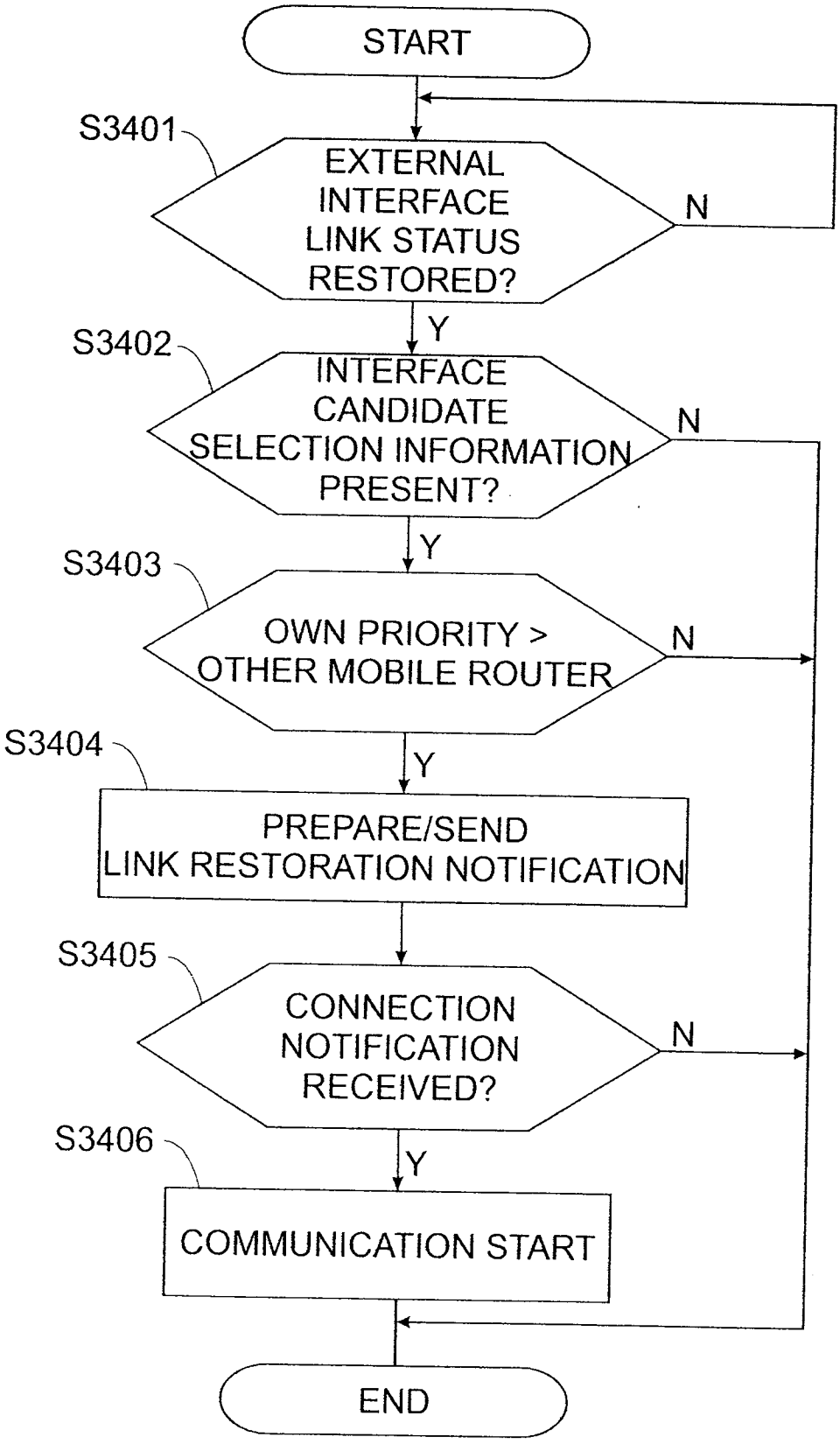
START
S3401
EXTERNAL INTERFACE LINK STATUS RESTORED?
N
Y
S3402
INTERFACE CANDIDATE SELECTION INFORMATION PRESENT?
N
Y
S3403
OWN PRIORITY > OTHER MOBILE ROUTER
N
Y
S3404
PREPARE/SEND LINK RESTORATION NOTIFICATION
S3405
CONNECTION NOTIFICATION RECEIVED?
N
Y
S3406
COMMUNICATION START
END

Figure 35

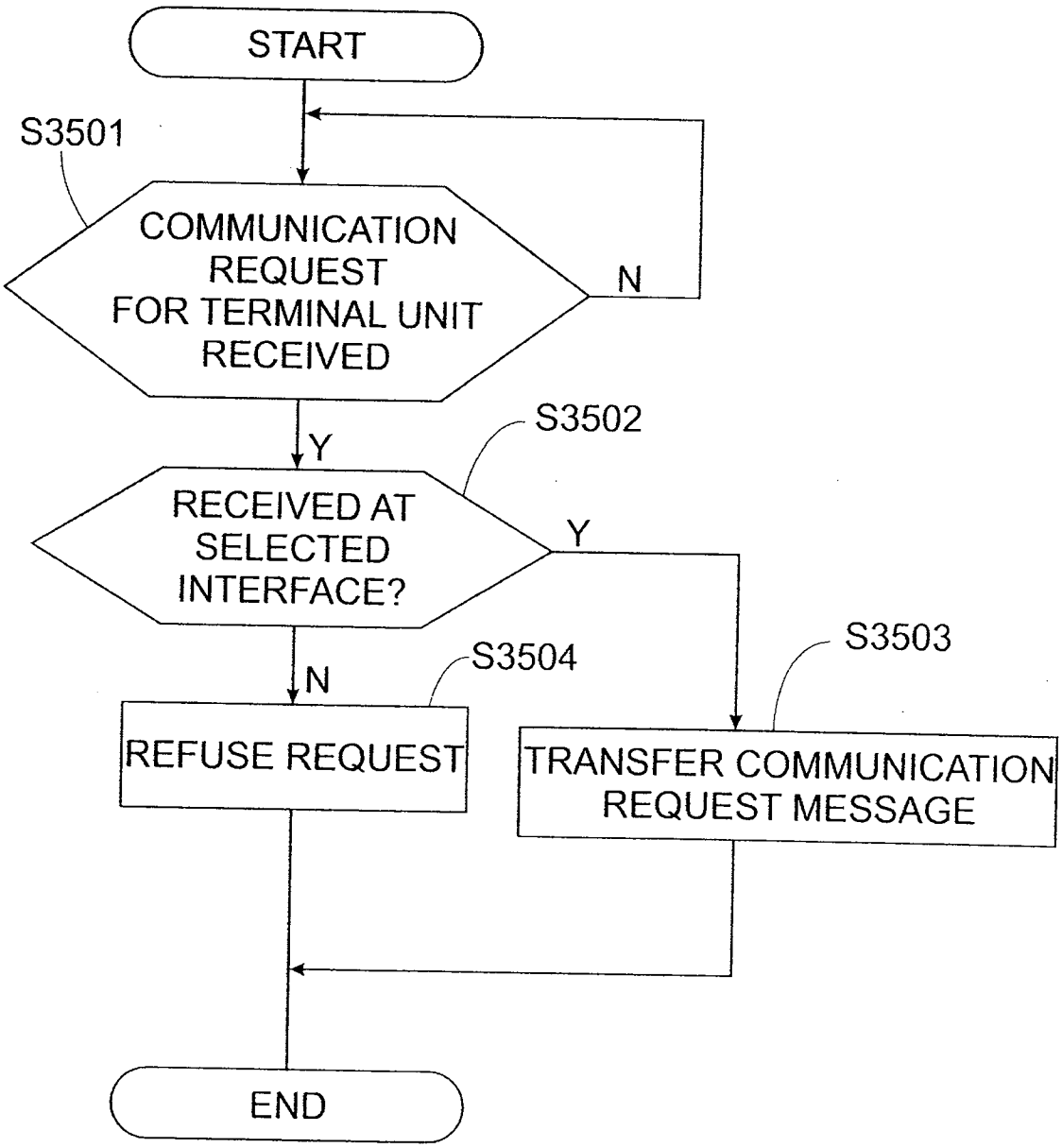
START
S3501
COMMUNICATION REQUEST FOR TERMINAL UNIT RECEIVED
N
Y
S3502
RECEIVED AT SELECTED INTERFACE?
Y
N
S3504
S3503
REFUSE REQUEST
TRANSFER COMMUNICATION REQUEST MESSAGE
END

Figure 36

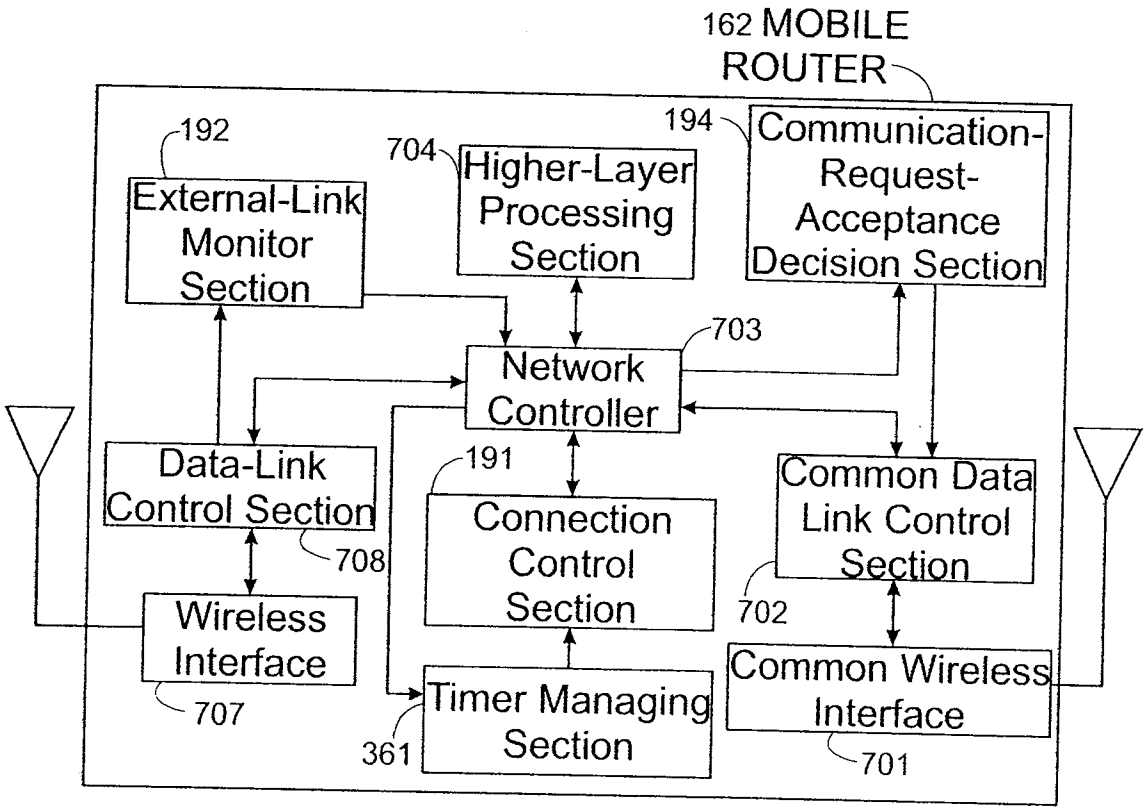
162 MOBILE ROUTER
192
External-Link Monitor Section
704
Higher-Layer Processing Section
194
Communication-Request-Acceptance Decision Section
703
Network Controller
Data-Link Control Section
708
191
Connection Control Section
Common Data Link Control Section
702
Wireless Interface
707
Timer Managing Section
361
Common Wireless Interface
701

Figure 37

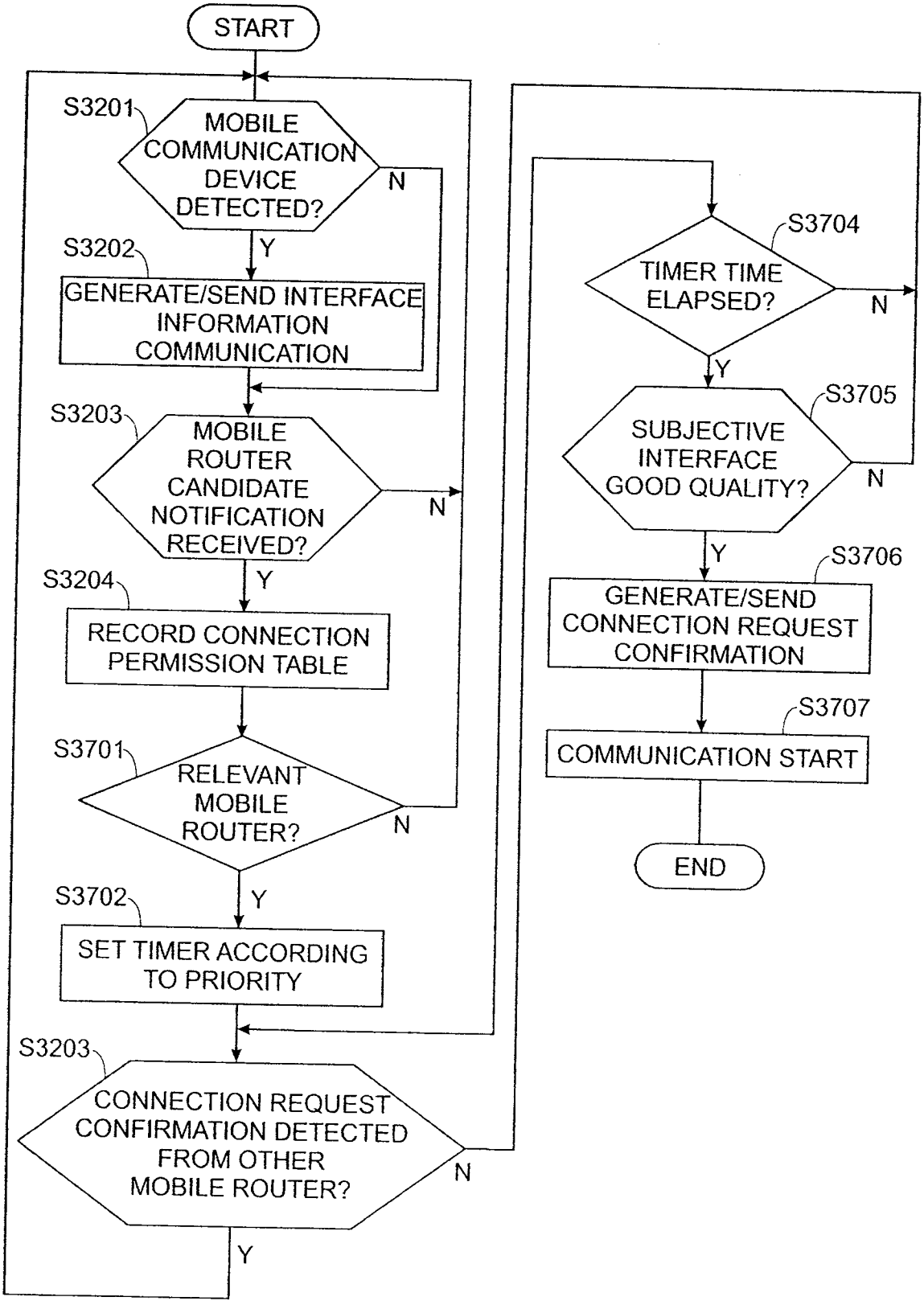
START
S3201
MOBILE COMMUNICATION DEVICE DETECTED?
N
Y
S3202
GENERATE/SEND INTERFACE INFORMATION COMMUNICATION
S3203
MOBILE ROUTER CANDIDATE NOTIFICATION RECEIVED?
N
Y
S3204
RECORD CONNECTION PERMISSION TABLE
S3701
RELEVANT MOBILE ROUTER?
N
Y
S3702
SET TIMER ACCORDING TO PRIORITY
S3203
CONNECTION REQUEST CONFIRMATION DETECTED FROM OTHER MOBILE ROUTER?
N
Y
S3704
TIMER TIME ELAPSED?
N
Y
S3705
SUBJECTIVE INTERFACE GOOD QUALITY?
N
Y
S3706
GENERATE/SEND CONNECTION REQUEST CONFIRMATION
S3707
COMMUNICATION START
END

Figure 38

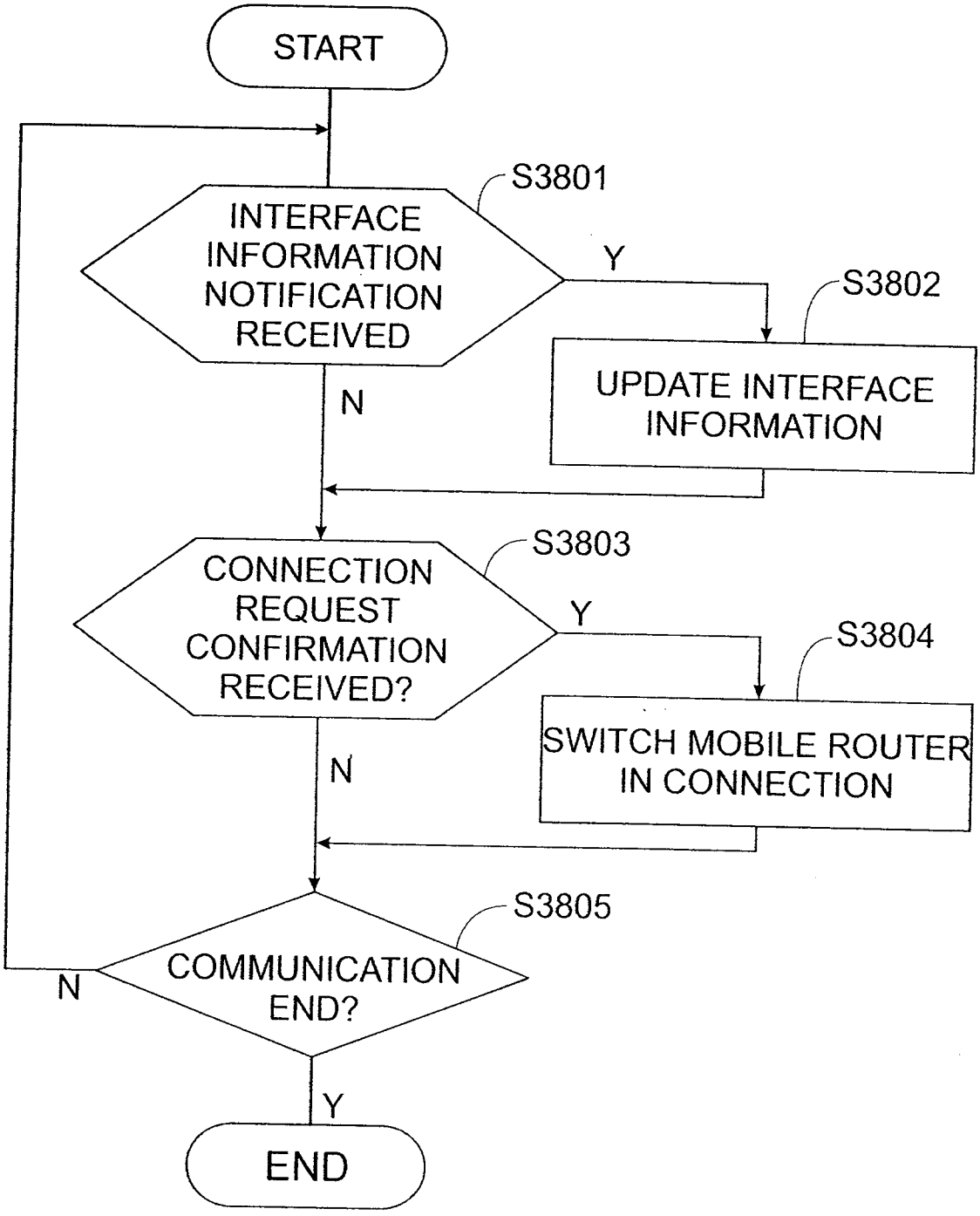
START
S3801
INTERFACE INFORMATION NOTIFICATION RECEIVED
Y
S3802
UPDATE INTERFACE INFORMATION
N
S3803
CONNECTION REQUEST CONFIRMATION RECEIVED?
Y
S3804
SWITCH MOBILE ROUTER IN CONNECTION
N
S3805
COMMUNICATION END?
N
Y
END

Figure 39

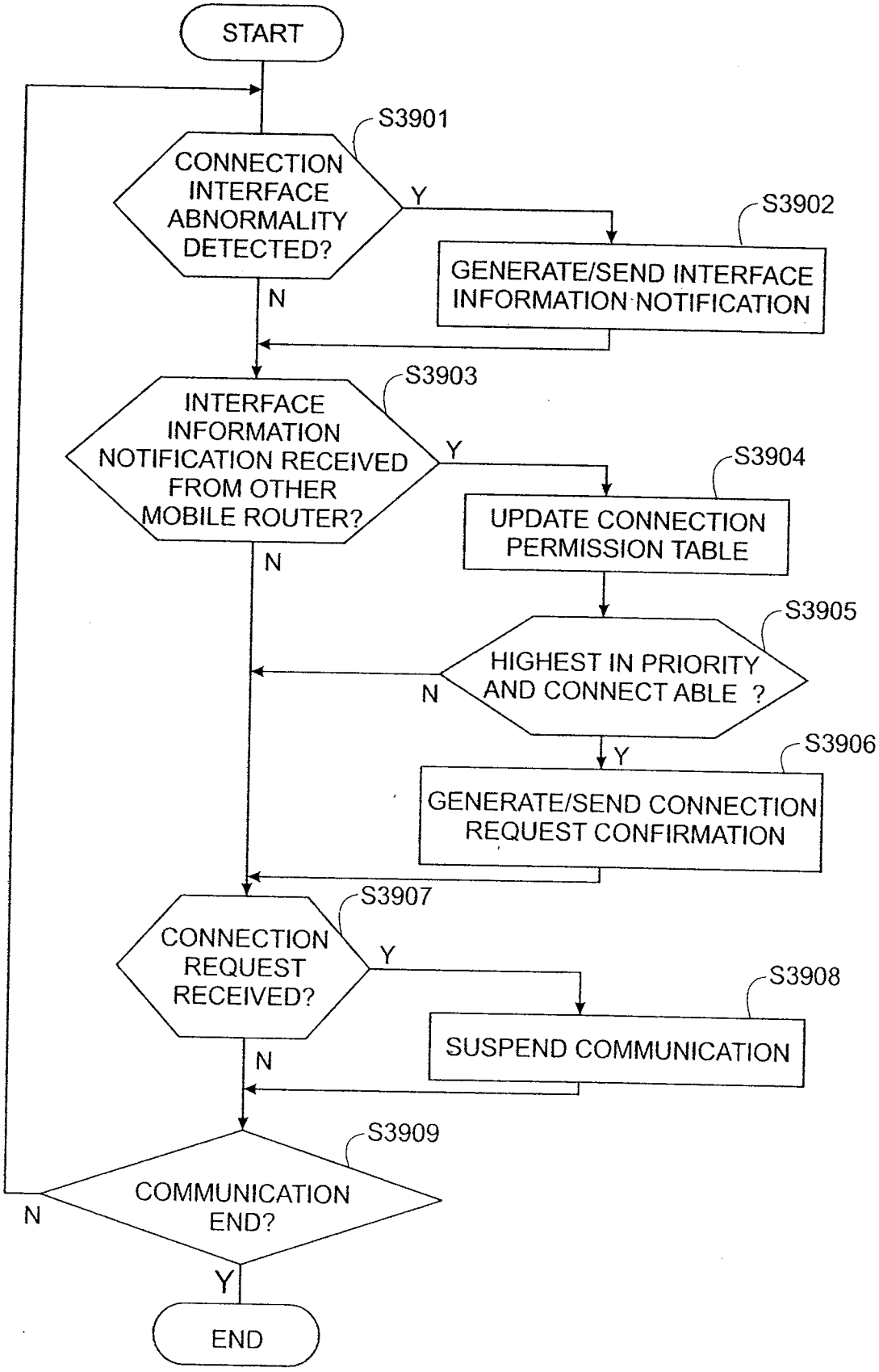
START
S3901
CONNECTION INTERFACE ABNORMALITY DETECTED?
Y
S3902
GENERATE/SEND INTERFACE INFORMATION NOTIFICATION
N
S3903
INTERFACE INFORMATION NOTIFICATION RECEIVED FROM OTHER MOBILE ROUTER?
Y
S3904
UPDATE CONNECTION PERMISSION TABLE
N
S3905
HIGHEST IN PRIORITY AND CONNECT ABLE ?
N
Y
S3906
GENERATE/SEND CONNECTION REQUEST CONFIRMATION
S3907
CONNECTION REQUEST RECEIVED?
Y
S3908
SUSPEND COMMUNICATION
N
S3909
COMMUNICATION END?
N
Y
END

Figure 40

4001 INTERFACE TYPE	4002 LINK STATUS
W-CDMA	CONNECTED
IEEE802.11a	CONNECTED

Figure 41 **PRIOR ART**

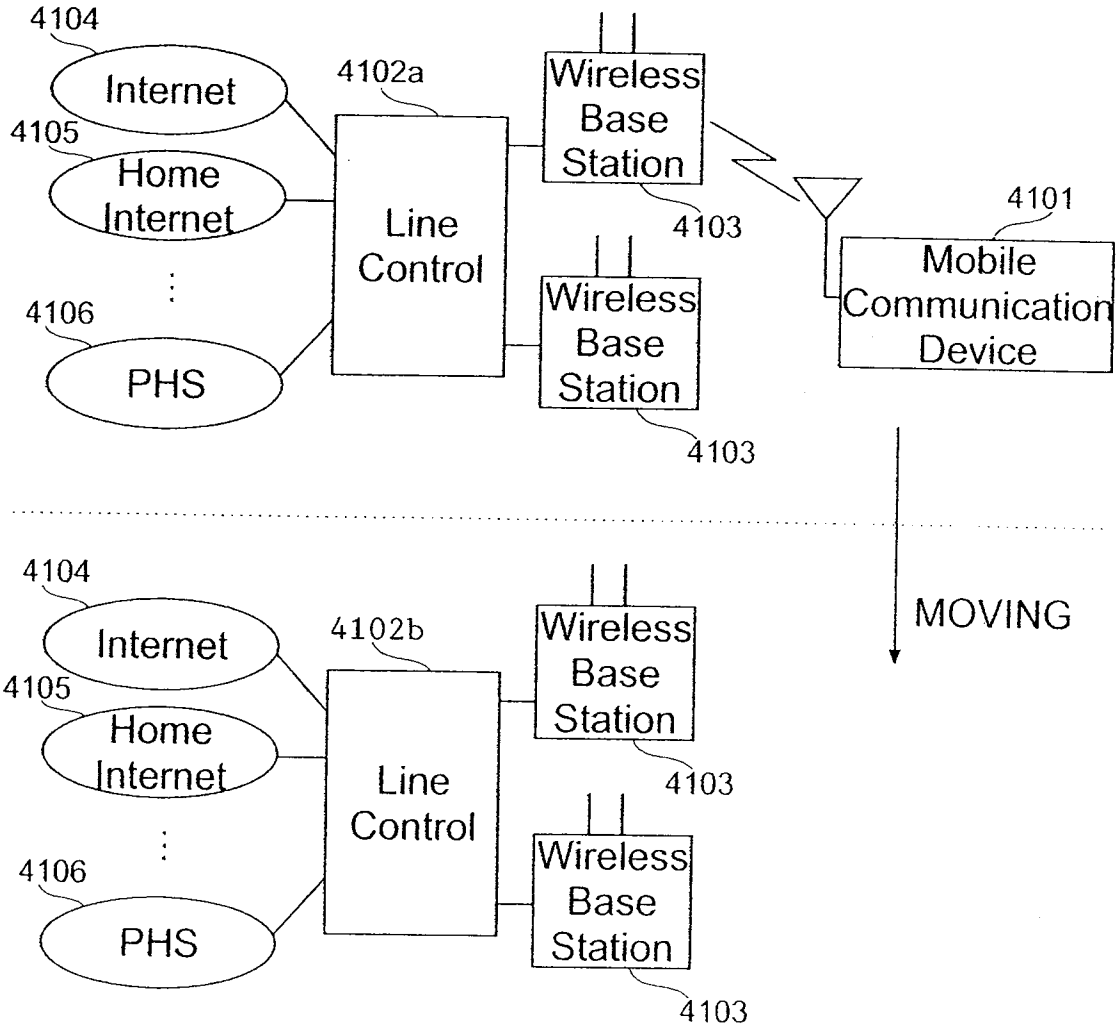
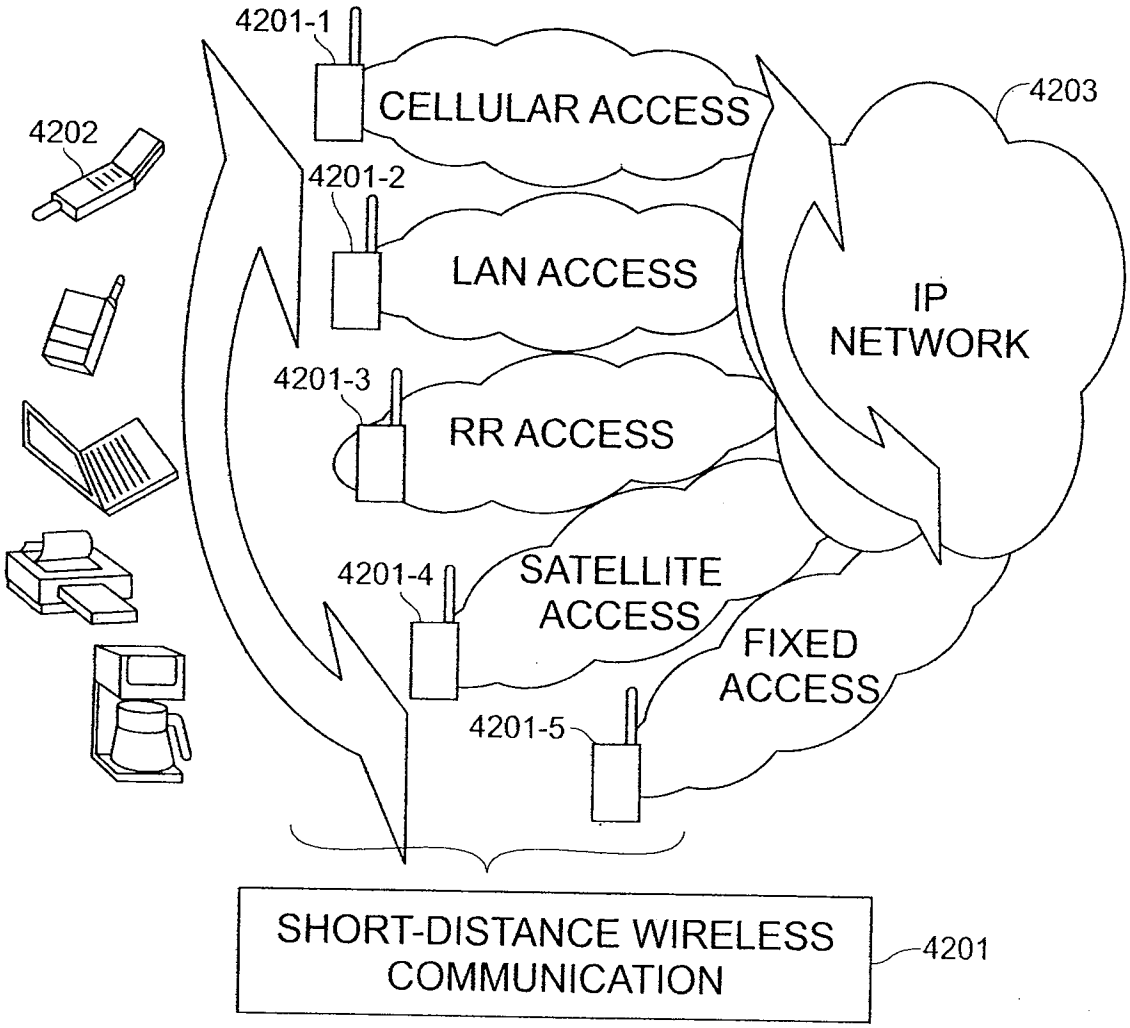
Figure 42 **PRIOR ART**